E1-8146

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June 19, 2008

Mr. Troy Brady
Section of Environmental Analysis
United States Surface Transportation Board
Suite 1100
395 E. Street, S.W.
Washington, D.C. 20423-0001

Re: STB Docket No.: _____
U.S. Rail Corporation, Petition for Waiver Under
49 CFR 1105.10(a)

Dear Mr. Brady:

In reference to our conversation, I enclose herewith Exhibit C to our letter dated April 21, 2008, which was previously emailed to you.

If you have any questions, please feel free to contact me.

Very truly yours,

Doreen Flanagan
Legal Assistant

/djf

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EXHIBIT C

Brookhaven Energy Project

Preliminary Scoping Statement

Under Article X of the Public Service Law

March 24, 2000

Prepared for:

Brookhaven Energy Limited Partnership
65 Boston Post Road West
Marlborough, MA 01752

Prepared by:

Earth Tech, Inc.
196 Baker Avenue
Concord, MA 01742

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LIST OF ABBREVIATIONS

Acronym	Definition
$\mu g/m^3$	micrograms per cubic meter
°C, °F	degrees Celsius, degrees Fahrenheit
a.m.	morning
ABB Alstom Power	Company created by power generation arms of Asea Brown Boveri and Alstom Power
ac	Alternating current
ACOE	Army Corps of Engineers
AGC	annual guideline concentrations
ANP	American National Power, Inc.
Article X Application	Application for a Certificate under Article X
ATSDR	Agency for Toxic Substances and Disease Registry
BACT	Best Available Control Technology
BMPs	Best Management Practices
Brookhaven Energy	Brookhaven Energy Limited Partnership
BPIP	Building Profile Input Program
CCGT	combined-cycle generating turbine
CEMS	continuous emissions monitoring system
Certificate	Certificate of environmental compatibility and public need
CFR	code of federal regulations
CNR	composite noise rating
CO	carbon monoxide
CO_2	carbon dioxide
dB	decibel
dBA	A-weighted decibels
dbh	diameter breast height
DEC	New York State Department of Environmental Conservation
DEM	digital elevation model
DHS	Department of Health Services (Suffolk County)
DOS	New York State Department of State
DPS	New York State Department of Public Service
DPW	Department of Public Works (Suffolk County)
ECL	Environmental Conservation Law
EMF	electric and magnetic fields
EPA	Environmental Protection Agency
ERCs	emission reduction credits
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
ft	feet
g	grams
GEP	Good Engineering Practice
gpd	gallons per day
gph	gallons per hour

Acronym	Definition
gpm	gallons per minute
H_2SO_4	sulfuric acid mist
HEAST	Annual Health Effects Summary Tables
HFF	hemispherical free field
HRSG	heat recovery steam generator
HSZ	hydrogeologically sensitive zone
IAM	Impact Assessment Meteorology
IRIS	Integrated Risk Assessment System
ISCST3	Industrial Source Complex Short-term (Atmospheric dispersion model)
ISO-NE	Independent System Operator-New England
km	kilometer
kV	kilovolt
L_{90}	sound level exceeded 90% of measurement period
LAER	Lowest Achievable Emission Rate
lbs	pounds
LDC	local distribution company
L_{eq}	equivalent sound level (average measured over time)
LIE	Long Island Expressway
LIPA	Long Island Power Authority
LIRR	Long Island Railroad
LOS	Level of Service
LWRP	local waterfront revitalization plan
m	meter
m/s	meters per second
mG	milligauss
mg/l	milligrams per liter
mgd	million gallons per day
mm	millimeter
MMBtu	million British thermal units
msl	above mean sea level
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NCEA	National Center for Environmental Assessment
NERC	North American Electric Reliability Council
NFPA	National Fire Protection Association
NNSR	Non-attainment New Source Review
N_2	nitrogen gas
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NP	National Power PLC
NPCC	Northeast Power Coordinating Council
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NSPS	New Source Performance Standards
NSR	New Source Review
NWI	National Wetland Inventory

Acronym	Definition
NWR	National Wildlife Refuge
NYAQS	New York Air Quality Standards
NYCRR	New York Consolidated Rules and Regulations
NYISO	New York Independent System Operator
NYPA	New York Power Authority
NYPP	New York Power Pool
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Public Health
NYSDOT	New York State Department of Transportation
NYSERDA	New York State Energy Research and Development Authority
O_2	oxygen
O_3	ozone
OPRHP	New York State Office of Parks, Recreation and Historic Preservation
OSHA	Occupational Safety and Health Administration
OSTF	NYPP/NYISO Operating Studies Task Force
p.m.	afternoon
PARs	phase angle regulators
Pb	lead
PIP	Public Involvement Program
PJM ISO	Pennsylvania-New Jersey-Maryland Independent System Operator
PM	particulate matter
PM_{10}	particulate matter with a diameter of 10 microns or less
POTW	Publicly owned treatment works
ppm	parts per million
the Project	the proposed Brookhaven Energy Project
PSC	Public Service Commission
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PSL	Public Service Law
PSNS	pretreatment standards for new sources
RACT	Reasonably Achievable Control Technology
RfCs	Health Based Reference Concentrations
SCGT	simple-cycle generating turbine
SCR	selective catalytic reduction
SCREEN3	EPA Screening Model
SCS	Soil Conservation Service
SCWA	Suffolk County Water Authority
SD	school district
SEP	State Energy Plan
SEQRA	State Environmental Quality Review Act
sf	square feet
SGC	Short-term guideline concentrations
SGPA	Special Groundwater Protection Area
SHPO	State Historic Preservation Office
SILs	Significant Impact Levels
SIS	system impact study

Acronym	Definition
SLM	sound level meter
SO_2	sulfur dioxide
SPAS	NYISO System Protection Advisory Subcommittee
SPCC	Spill Prevention Control and Countermeasure
SPDES	State Pollutant Discharge Elimination System
SUNY	State University of New York
SVOCs	semi-volatile organic compounds
SWPPP	Stormwater Pollution Prevention Plan
TERREL	terrain elevation model
TPAS	NYPP/NYISO Transmission Planning Advisory Subcommittee
tpy	tons per year
TSP	Total Suspended Particulates
US	United States
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VISCREEN	EPA Visibility Screening Model
VOC	volatile organic compounds
WSR	Wild, Scenic and Recreational
Yaphank STP	Yaphank Sewer Treatment Plant

1.0 SUMMARY AND INTRODUCTION

1.1 Proposed Project

Brookhaven Energy Limited Partnership (Brookhaven Energy) is proposing to construct and operate the Brookhaven Energy Project (the Project), a proposed 580-megawatt (MW) combined-cycle power generation facility at a location southeast of the Sills Road interchange of the Long Island Expressway (Exit 66), within the town of Brookhaven. The proposed Project would be fueled by natural gas with limited use of low-sulfur distillate oil as backup fuel.

The proposed site for the Project is shown in Figure 1-1, *Site Location*. It consists of approximately 21 acres. The Project site is adjacent to both natural gas and electric transmission lines. A pipeline of the Brooklyn Union natural gas distribution system abuts the site to the north, while 138 kilovolt (kV) transmission lines, constructed to operate at 345 kV, are to the east. Water is available near Sills Road from the Suffolk County Water Authority, while the nearest existing wastewater treatment facility (the Yaphank Sewer Treatment Plant, which services several facilities owned by Suffolk County) is approximately 1 mile away.

The Project is being developed to bring a competitively priced, new, efficient and clean electric generating resource to New York State and Long Island at a time when adding such a resource is in the public interest. The Project will minimize environmental impacts and will be a source of significant revenue for its host community, as well as contributing to regional economic development. The Project site is zoned for industrial use and is distant from residential areas.

The Project will be developed, owned and operated by Brookhaven Energy[1]. Brookhaven Energy personnel have extensive experience in the design, development, construction and operation of such facilities both in the United States and abroad. A strong development team has been assembled to pursue the Project, with each participant bringing a particular area of expertise. The team's extensive experience and areas of expertise are outlined in Section 1.4.

1.2 The Article X Process

Permitting for the Project will be under Article X of the New York State Public Service Law (PSL), as last amended in December 1999. An applicant intending to build an electric generating facility in New York must first obtain a certificate of

[1] Brookhaven Energy Limited Partnership (Brookhaven Energy) was formed by American National Power, Inc. (ANP) specifically for development of the Project. Early development activities (for example, site selection) were conducted by ANP. Brookhaven Energy intends to enter into a contract with ANP Operations Company for operation and maintenance of the Project.

environmental compatibility and public need (Certificate) under Article X. Article X regulates the construction and operation of electric generating facilities of 80 MW or more.

The application for a Certificate under Article X (the Article X Application) is filed with the New York State Board on Electric Generation Siting and the Environment (the Siting Board), which is comprised of five members who are the heads of their respective state agencies or their designees: the New York State Department of Public Service (DPS), New York State Department of Environmental Conservation (NYSDEC), New York State Department of Health (NYSDOH), the Department of Economic Development (Empire State Development), and the New York State Energy Research and Development Authority (NYSERDA). For each case, two additional members from the local area are appointed by the Governor. The proceeding is governed by both the Article X statute (Sections 160 through 172 of the Public Service Law) and by the Rules of the Siting Board (16 NYCRR 1000 through 1004).

1.3 Purpose of this Statement

This Preliminary Scoping Statement is required in the Article X process. It is intended to introduce the Project to the affected state and local agencies, as well as members of the public. Discussions with affected regulatory officials from state and local agencies as well as with the public will help to define the scope of studies that will need to be undertaken to support Brookhaven Energy's forthcoming Article X Application. The scope is formulated in a series of "stipulations" (see Appendix A).

This Preliminary Scoping Statement presents the Project as currently conceived, and also presents an analysis of the environmental constraints and permitting issues applicable to the Project. Brookhaven Energy's intent in developing and issuing this document has been to investigate and present an initial analysis of the Project's potential benefits, impacts, and likely mitigation measures, consistent with the requirements of the Article X process. This process, as defined by state statute and the Siting Board regulations, requires that the Preliminary Scoping Statement include:

- A description of the proposed facility. PSL §163.1(a), 16 NYCRR 1000.4(c)2(i). This description of the facility, as currently proposed, is found in Section 2 of this report.

- A report on the "environmental setting" of the Project, providing "as much information as is available." PSL §163.1(a), 16 NYCRR 1000.4(c)1. In this document, Brookhaven Energy presents existing information relative to the environmental setting by discipline. These disciplines consist of the chapter headings for Sections 5 through 16.

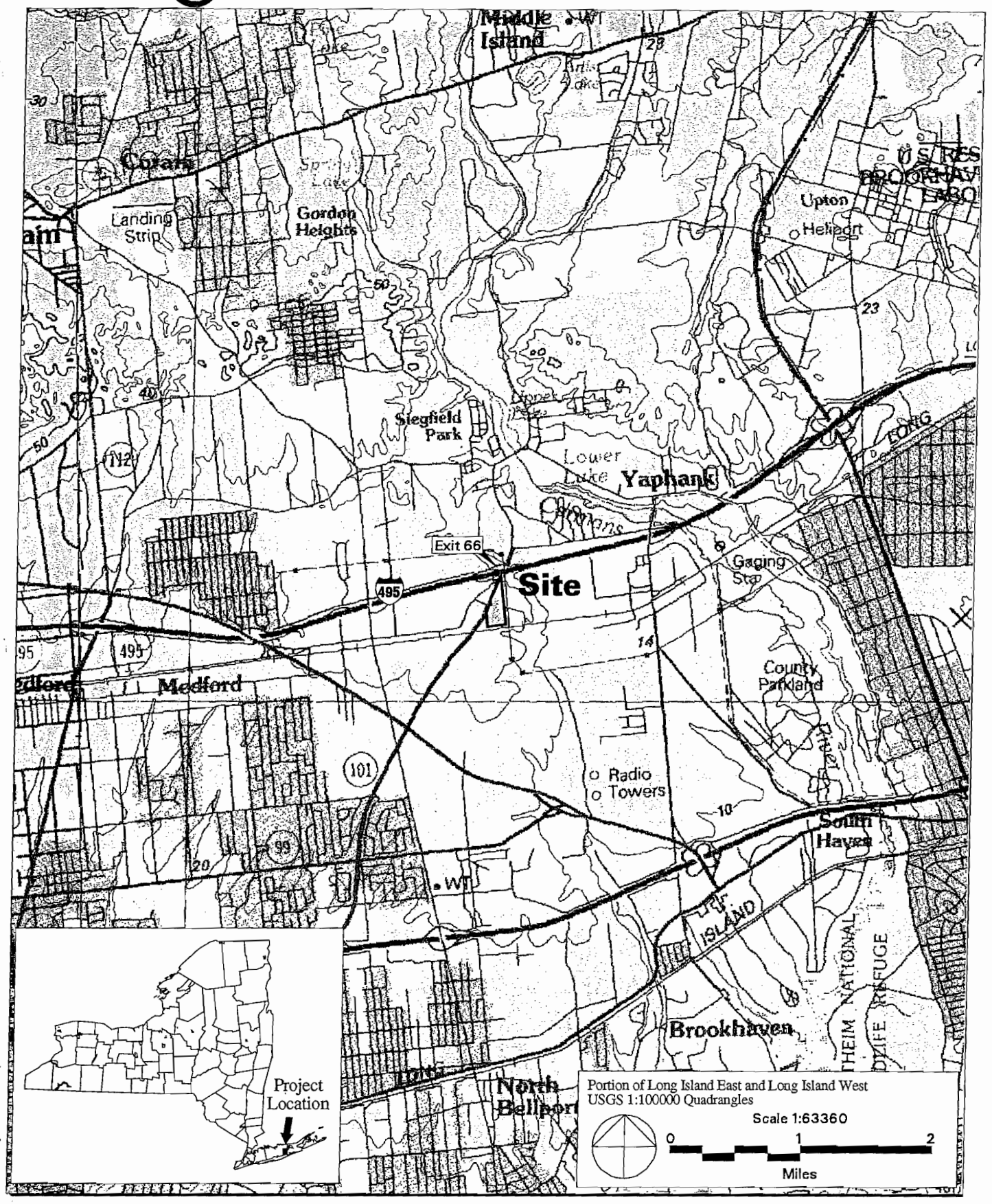

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Figure 1 - 1
Site Location

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- Any significant issues raised to date either by the public or involved agencies during informal or formal consultation, as well as Brookhaven Energy's initial responses. 16 NYCRR 1000.4(c)6. A description of the meetings that have been held to date is included in Section 4 and Appendices E and F. Brookhaven Energy's initial responses are included in the context of the discussion in Sections 5 through 16.

- An analysis of "reasonable alternatives." 16 NYCRR 1000.4(c)2(v). Brookhaven Energy identifies and discusses in Section 3 the various Project alternatives that have been or will be evaluated. These include different designs, air pollution control technologies, peaking capability, and fuel strategy.

- A brief discussion of potential environmental impacts. PSL §163.1(b), 16 NYCRR 1000.4(c)2(ii). Brookhaven Energy discusses potential impacts, both positive and negative, in Sections 5 through 16, respectively.

- A brief discussion of the proposed study program -- the extent and type of information required and the methodology of study. PSL §163.1(c), 16 NYCRR 1000.4(c)2(iii). This requirement underlies the fundamental purpose of this document: to propose a scope of study for the licensing of the facility. The proposed study program for each potential impact is outlined in Sections 5 through 16, respectively.

- A brief discussion of measures to minimize environmental impacts and "an initial identification of mitigation measures." PSL §163.1(d), 16 NYCRR 1000.4(c)2(ii). Each such initial mitigation proposal is discussed in Sections 5 through 16, respectively.

1.4 Development Team

1.4.1 American National Power, Inc. (ANP)

ANP's parent company is National Power PLC (NP). NP and its subsidiaries own and operate power plants throughout the world. NP owns and/or operates approximately 30,000 MW of generating capacity, including the ANP assets. NP's approximately $9 billion in market capitalization provide ANP and its affiliates the ability to develop and finance major power generation facilities throughout North America.

ANP has ownership interests in and/or operates four independent power projects in the United States:

- Cogen Technologies New Jersey Venture, 165 MW combined-cycle generating turbine (CCGT), Bayonne, New Jersey;

- Hartwell Energy Limited Partnership, 300 MW simple-cycle generating turbine (SCGT), Hartwell, Georgia;
- Oyster Creek Limited Partnership, 424 MW CCGT, Freeport, Texas; and
- Milford Power Limited Partnership, 161 MW CCGT, Milford, Massachusetts.
- ANP also has four projects, totaling almost 4,000 MW, under construction:
- Midlothian Energy Project, 1650 MW CCGT, Midlothian, Texas;
- Hays Energy Project, 1,100 MW CCGT near San Marcos, Texas;
- Blackstone Energy Project, 580 MW CCGT, Blackstone, Massachusetts; and
- Bellingham Energy Project, 580 MW CCGT, Bellingham, Massachusetts.

ANP maintains a staff for development, financing, engineering, construction management, operations, power marketing, and fuel procurement/management. An affiliate of ANP is also in the process of licensing the 1,100 MW Ramapo Energy Project in New York State (Rockland County).

In addition to ANP's in-house capabilities, Brookhaven Energy has assembled a team for the Project with complementary skills to assist in planning, building and operating a reliable, low-cost and environmentally sound facility. Additional information regarding each member of the team is provided below.

1.4.2 ABB Alstom Power

ABB Alstom Power is a company created from the power generation activities of Asea Brown Boveri (ABB, based in Zürich, Switzerland) and Alstom (based in Paris, France). The company is a world leader in the supply of power generation equipment and services, with annual sales of $11 billion and 54,000 employees. The company's range of products include turnkey power plants, gas and steam turbines, generators, boilers, auxiliary equipment, environmental control equipment, power plant controls, services including repowering, retrofit, and long-term operation and maintenance, and project financing services. ABB Alstom is able to draw on the experience gained from one of the world's largest installed bases of power generation equipment. At 640,000 MW, it is equivalent to approximately 20 percent of all plants installed worldwide. ABB Alstom's Turbine Generator Division, domestically based near Richmond, Virginia, supplies gas and steam turbines, as well as turnkey combined cycle plants, for the US market.

1.4.3 Beveridge & Diamond

Beveridge & Diamond is a national law firm with six offices in the United States. Its practice areas include environmental, energy, and land use law. The Beveridge &

Diamond New York Office has been involved in the siting and permitting of eight major cogeneration facilities in the New York metropolitan area.

1.4.4 Mars, Sloane & Conlon

Mars, Sloane & Conlon is a local firm with offices in Hauppauge, Suffolk County, New York, specializing in commercial real estate and land use. The firm's members have extensive experience dealing with various local agencies, including Suffolk County and the town of Brookhaven. Members of the firm have developed relationships with community organizations and interested parties who are likely to have an interest in expressing their views on this proposal.

1.4.5 Environmental Futures

Environmental Futures is a national marketing and communications consulting firm specializing in the energy and environmental sectors. It offers a range of services from marketing to corporate and public communications. It has extensive experience helping energy companies manage their public and government relations.

1.4.6 Earth Tech

Earth Tech is a national environmental consulting firm, with a network of 72 offices in the United States and Canada. It is in industry leader in the siting and licensing of power generation and other energy projects. Its capabilities include all of the environmental disciplines necessary for the environmentally sound licensing of the Project. These include air quality engineering, water quality engineering and hydrology, geology, civil engineering, terrestrial and wetlands ecology, transportation engineering and planning, landscape architecture and socioeconomics. Earth Tech has participated in the successful permitting of over 100 power plants in the northeast, including more than a dozen in New York State.

2.0 PROJECT DESCRIPTION

2.1 Applicability

This section addresses site location and site characteristics, Project layout and appearance, and primary components. In addition, descriptions of Project water use, wastewater discharge, air pollution control systems, utility interconnections, solid and hazardous waste, and facility safety features are provided.

In order to define the scope of studies for the Project's Application, Brookhaven Energy is presenting the description of both the Project and necessary interconnections, which include water and sewer lines. Brookhaven Energy also anticipates that off-site upgrades to Long Island's natural gas and/or electrical systems may be necessary, but any such upgrades are only expected to involve utilities within existing corridors. Such upgrades would be licensed and built to serve the strategic expansion or system planning goals of the gas and/or electric utilities, and not exclusively for the Project. Therefore, Brookhaven Energy proposes that the scope of the Application would include: (1) a description of all interconnections and upgrades, and the results of all available system impact studies (as discussed in Sections 5 and 6); (2) an evaluation of environmental impacts for any interconnection built for the Project's exclusive use (anticipated to be the water and sewer lines); (3) an evaluation of environmental impacts of upgrades that are not exclusively used by the Project, whether licensed as part of the Project or not, if they involve new rights-of-way.

2.2 Project Site and Environmental Setting

The Siting Board regulations require that the Application provide "a discussion of the environmental setting of all relevant resources for an area of sufficient size to enable comparison of the present environment to the environment that will likely exist following the construction and operation of the proposed facility." 16 NYCRR 1001.1(a). In order to facilitate this comparison, the specific environmental setting relevant to each discipline of study is detailed in Sections 5 through 16, respectively, where it is coupled with an impact evaluation. A general site description and environmental summary is provided here.

2.2.1 The Site

The Project site consists of approximately 21 acres, bounded on the north by the Long Island Expressway (LIE), on the west by Sills Road (Suffolk County Route 101), on the south by the Long Island Railroad (LIRR), and on the east along a line parallel to a Long Island Power Authority (LIPA) transmission line. One major advantage of the site is that the necessary gas and electric facilities to support the Project are adjacent to the site. See Figure 2-1, *Major Gas and Electric*

Infrastructure on Long Island. Access to the site is excellent due to its proximity to the LIE and Sills Road (County Route 101), which is a four-lane divided highway, with an existing signalized intersection and left turn lane at the entrance to the Project site.

The site is entirely within the town boundaries of Brookhaven. All of the area within a 5-mile radius of the project is part of Brookhaven. In addition to notifying Brookhaven town officials of the Article X proceedings, Brookhaven Energy will also send notices to all of the villages within Brookhaven.

The site elevation rises from the LIE at the northeast portion of the site, with steep slopes along the northwest side (the Sills Road frontage). Erosion has occurred at the northern tip of the site. Terrain along the northern half of the site is undulating. As one travels to the middle of the site (toward a LIPA distribution line), the site is at grade with Sills Road. Most of this interior portion of the site is flat. Toward the south, the elevation falls again, such that the lowest portion of the site is to the south. There is also, in the southern half of the site, a gentle downward slope as one moves toward the east. See Figure 2-2, *Terrain in the Vicinity of the Project Site*.

The site is characterized by a mixed deciduous forest. The tree growth is not mature. Most trees are less than 3 inches in diameter. There are no wetland areas on the site. The site is not located in a 100-year or 500-year floodplain. It is also outside the nearest Wild, Scenic, and Recreational River Zone. There are no known water wells on-site. No exceptional natural communities or protected species have been noted. Field visits have revealed no evidence of any recent disturbance to the site, except for the existing LIPA distribution line right-of-way that bisects the site and an unimproved road running parallel to the south perimeter of the site, separated from the LIRR tracks by about 25 feet of forested buffer. There is an occasional presence of maintenance vehicles servicing electricity distribution lines.

All of Long Island is within an EPA-designated sole-source aquifer. The aquifer beneath Long Island is its only source of potable water. There are areas of more stringent protection within Long Island. Most of Suffolk County's interior, including the Project site is within a "deep recharge area" as defined by Article 7 of the Suffolk County Sanitary Code ("primary groundwater recharge area" under Environmental Conservation Law §15). The site is situated just inside the southern boundary of this zone. It is outside of the Central Pine Barrens or any special groundwater protection areas (as defined under ECL §§55 and 57). Special consideration regarding the protection of ground water resources is a key component of Project development.

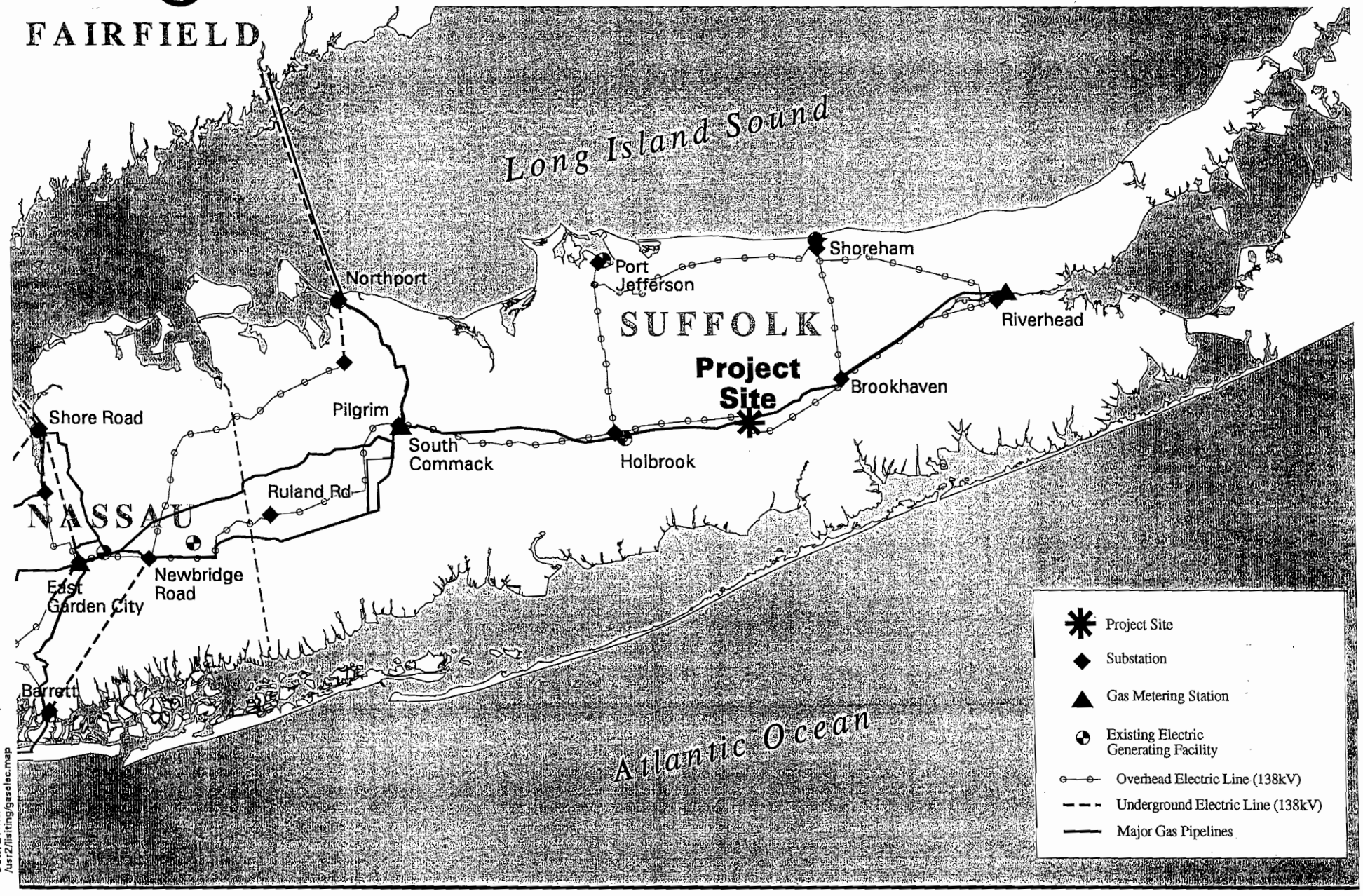

Figure 2 - 1
Major Gas and Electric Infrastructure on Long Island

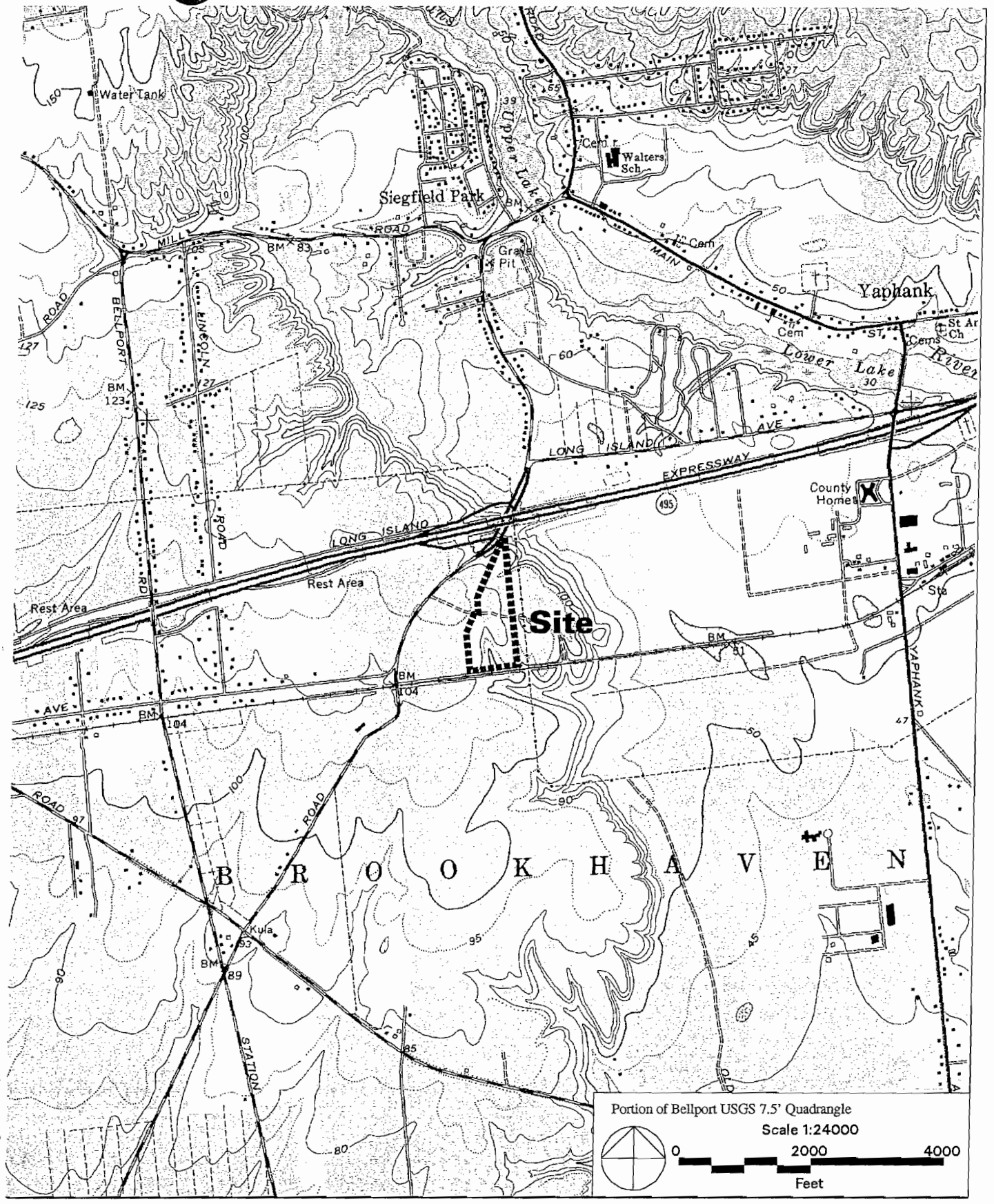

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Figure 2 - 2
Terrain in the Vicinity of the Project Site

2.2.2 The Region

In a regional context, the site lies on the boundary between flat coastal terrain to the south and more elevated terrain toward the interior of Long Island. The topography of Long Island is generally flat, rising from sea level to about 100 feet above sea level. Some hills in the interior of the island, and especially on the north side of the island, rise significantly higher (more than 300 feet above sea level). Prominent features within 1 mile of the site include the LIE, which is to the north, and numerous Suffolk County facilities, including the County Farm and the Police Headquarters, to the east of the site. Across the LIE (approximately 1 mile away) is the Carmans River and the hamlet of Yaphank. Depending upon the final layout of the Project, there may be as few as 15 residences within 3,000 feet of the Project.

Long Island's sole source of water is an underground aquifer, whose protection is an important regional issue. Well drilling permits have been required for decades. Suffolk County's Sanitary Code provides for review of new facilities to assure aquifer protection. Wastewater treatment in Suffolk County is administered, for the most part, through relatively small sewer districts with small treatment plants, many of which are operated by the Suffolk County Department of Public Works (DPW).

Eastern Long Island is substantially more rural than western Long Island. This area contains some major natural resource features, such as the Central Pine Barrens, as well as major installations, including the Brookhaven National Laboratory and several former military installations. Most development and growth on Long Island is occurring in Suffolk County, and the preservation of agriculture, fishing, and tourism in eastern Long Island remains a priority of state and local governments.

Long Island is an electric load pocket, with a very constrained interface to New York City (two 138 kV circuits to Jamaica substation), two 345 kV circuits to Westchester County (Sprain Brook and Dunwoodie), and one 138 kV circuit to Connecticut (Norwalk Harbor).

Long Island is served by interstate gas pipelines and a network of Brooklyn Union Gas local distribution lines, which operate at lower pressures than interstate pipelines. The interstate pipelines on Long Island are Iroquois, terminating at South Commack, and Transco, terminating at Long Beach. Brooklyn Union acquired the system through a merger with the Long Island Lighting Company.

2.3 Project Description

This section describes the proposed Project design, primary components, water supply, wastewater strategy, air pollution control systems, waste generation and disposal, Project safety systems, and interconnection issues.

2.3.1 Project Design

The Project is a 540 MW (nominal) natural gas-fired combined cycle power plant (with low sulfur fuel oil back up). It will supply electricity to the regional grid as an exempt wholesale generator. The nominal capacity during periods of steam injection for power augmentation would be 580 MW. The Project will participate in the new wholesale electricity market, selling at market-determined prices, thereby providing low-cost electrical energy to New York State's consumers. As a merchant plant, none of the Project's investment risk will go to electric ratepayers. Rather, it is being constructed, and will operate, at the sole risk of Brookhaven Energy.

The Project will consist of two identical single shaft power islands, each with an ABB GT-24 combustion turbine, a heat recovery steam generator (HRSG) with Selective Catalytic Reduction (SCR) for control of nitrogen oxides (NO_x), an exhaust stack, a steam turbine, an air-cooled condenser, and an electric generator. The generator, steam turbine and combustion turbine, share a common shaft. Each combustion turbine will generate approximately 180 MW of electricity, and the exhaust heat of the turbine will be recaptured to produce steam and drive the steam turbine, producing an additional 90 MW of electricity. The process of utilizing both the power generated from the combustion turbine along with that generated from the steam turbine is referred to as "combined" cycle electric generation. Coupled with the use of natural gas as the primary fuel, with low-sulfur distillate oil as a backup, combined-cycle power generation provides a highly efficient and clean source of energy. The proposed Project incorporates the capability to not only operate at its standard baseload level, but to augment energy production by approximately 40 MW through steam injection when electricity demand warrants. The ability to use steam injection is an added benefit, because it can reduce the need to build separate peaking plants.

2.3.2 Layout and Appearance

The Project design and layout will be carefully planned to minimize its impact to the surrounding community and the environment. The Project will consist of the generation building, shop/warehouse buildings and equipment; demineralized water treatment plant and storage tanks; air-cooled condensers; HRSGs; two exhaust stacks; an on-site gas compressor; backup fuel storage; a stormwater management system; access roadways; and interconnections to the electrical transmission line, natural gas pipeline(s), and water and sewerage systems. See Figure 2-3, *Preliminary Conceptual Site Plan* and Figure 2-4, *Preliminary Elevation Drawings*. The preliminary site plan has been used for the analyses presented in this document.

The most prominent structures associated with the Project are the air-cooled condensers, approximately 90 feet high; the exhaust stacks, not more than 180 feet high; and the HRSGs, 72 feet high at the top of their main structure. This layout is

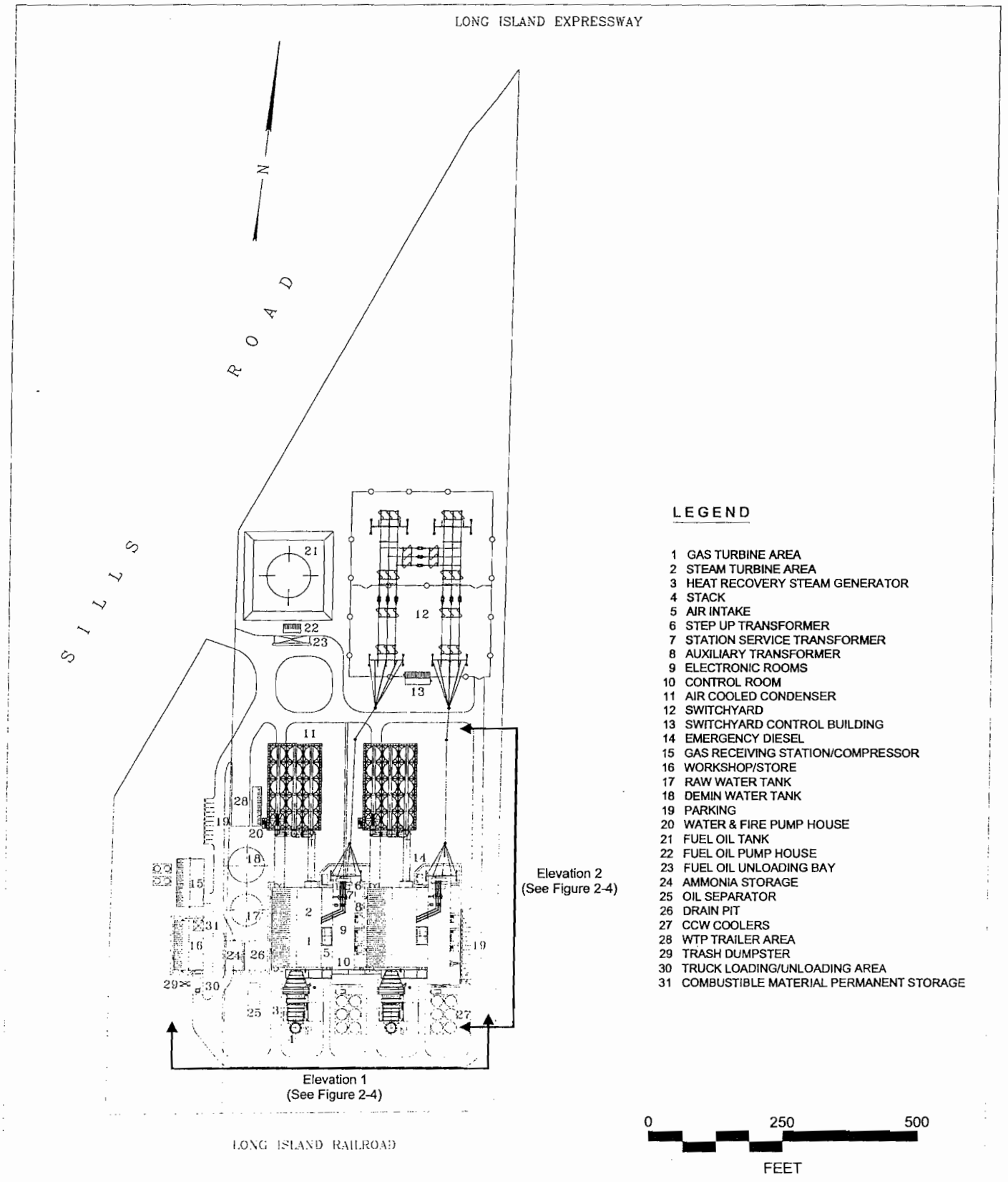
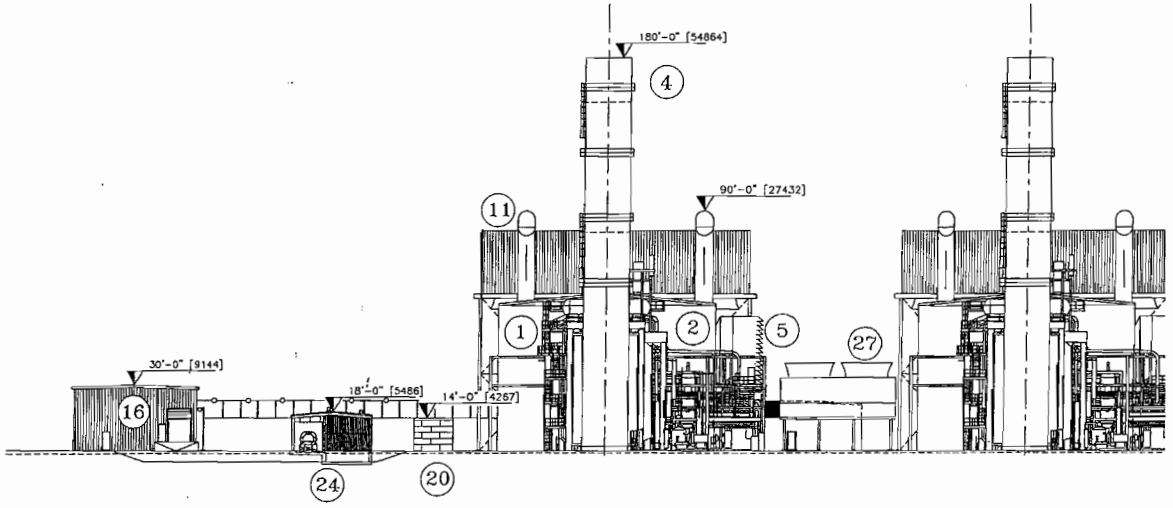
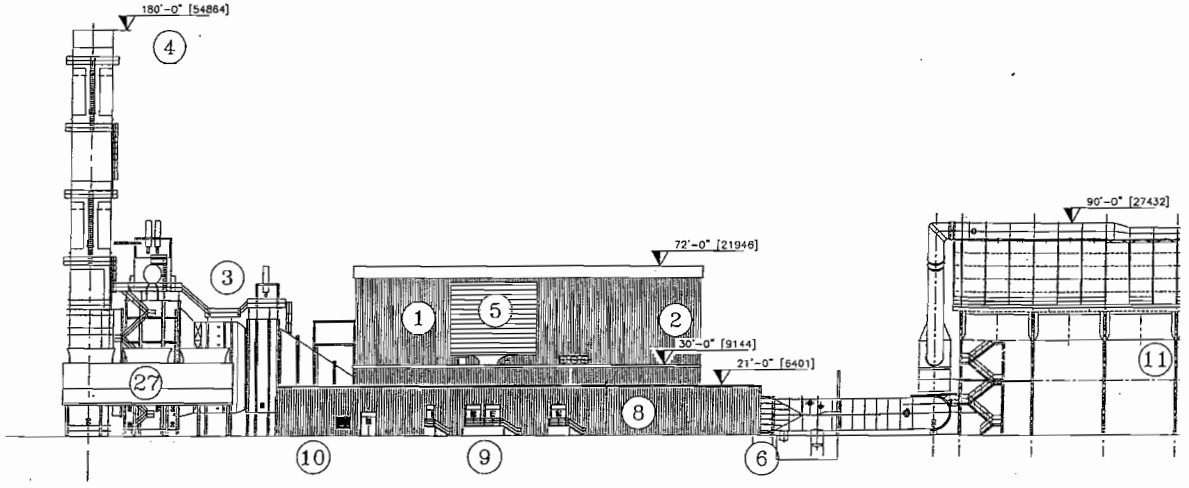


Figure 2-3
Preliminary Conceptual Site Plan



ELEVATION 1 (From Figure 2-3)



ELEVATION 2 (From Figure 2-3)

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based on Brookhaven Energy's preliminary design efforts and comment received to date. It not a final layout, and Brookhaven Energy continues to welcome comments on it.

The area around the Project buildings will be landscaped, loamed and seeded, or graveled. Disturbance to natural vegetation will be minimized. The landscaping and site plan will accommodate easy access for equipment needed to perform routine maintenance, and will be designed to provide partial screening and a visual buffer for the Project.

2.3.3 Air Emission Control

The GT-24 combustion turbine is based on the latest technology offered by ABB Alstom Power. This state-of-the-art technology offers a very high effieciency along with a competitive capital cost, making the combined-cycle configuration very efficient and, therefore, economically competitive. The GT-24 achieves superior NO_x emission levels as a result of its dry low NO_x sequential combustion system working in conjunction with the SCR.

Sequential combustion technology also enables ABB Alstom Power to achieve extremely high baseload efficiencies, as well as extremely competitive part load efficiencies. The unique sequential combustion approach contrasts with other recent combustion turbine advances that have relied on increased turbine inlet temperatures. Through the utilization of GT-24 advanced technology, the Project will be one of the most efficient and cleanest combined-cycle power plants in the world.

Selective catalytic reduction, a post combustion flue gas control, is a commercially available, proven technology to remove NO_x from the exhaust gases downstream of the combustion turbine. The SCR process involves injecting an aqueous ammonia solution into the flue gas stream and then passing the flue gas stream through a catalyst bed that converts NO_x to benign nitrogen (N_2) and oxygen (O_2) gases.

The facility will be designed to meet Lowest Achievable Emission Rate (LAER) and Best Available Control Technology (BACT) standards, as applicable, for emissions control. Emissions of sulfur dioxide (SO_2) will be limited by using natural gas as the primary fuel and very low sulfur oil (0.05% sulfur content) as a backup fuel. Emissions of particulate matter (PM), carbon monoxide (CO) and volatile organic compounds (VOC) will be achieved through proper combustion controls. An oxidation catalyst will be evaluated for this Project, consistent with federal and state requirement that the Project apply LAER and BACT.

2.3.4 Water and Wastewater

The Project will employ an air-cooled condenser to minimize water requirements. Under normal baseload facility operations, the Project's average water supply

requirements are expected to be approximately 29,400 gallons per day (gpd). An adequate supply of water to meet Project needs is available from the Suffolk County Water Authority (SCWA). The nearest water service is via a 16-inch main under the old Patchogue-Yaphank Road (for more information, see Figure 16-1). A spur into the Project site will be installed, possibly using Old Town Road. During steam injection for power augmentation during peak demand periods, or during periods of oil-fired operation, water demands on the SCWA system will increase for those short periods. A preliminary estimate of the demand for steam injection would be on the order of 36,000 gallons per hour (gph). A preliminary estimate for additional demand during backup oil use (*e.g.*, a very cold weather day) is 37,500 gph.

Under normal baseload operating conditions, an average of approximately 21,200 gpd of process and sanitary wastewater will be discharged. Both process and sanitary wastewaters will be directed to the Yaphank Sewer Treatment Plant (identified in Figure 16-1) via a new sewer interconnect for treatment and discharge to groundwater. That plant has a design capacity of 250,000 gpd. Because its current flows are approximately, 110,000 gpd, the plant appears to have more than enough capacity to accept Brookhaven Energy's discharge. The sewer interconnect will either follow a route to the east, toward an existing interceptor pipe under Yaphank Avenue, or a direct route to the southeast toward the Yaphank STP. Stormwater will be treated on-site and recharged to groundwater.

2.3.5 Protection Systems

Construction and operation of the Project will be designed and managed to ensure maximum safety for employees and the surrounding community. All design, construction and operational activities and equipment for the proposed Project will be in accordance with applicable federal, state, and local regulations, and will comply with the latest regulations and standards of applicable governmental agencies and engineering associations. These organizations include the National Electrical Manufacturing Association, Department of Transportation, the American Society of Mechanical Engineers, the American National Standards Institute, and the National Fire Protection Association.

The Project will include safety and emergency systems to ensure safe and reliable facility operation. The Project design will include, at a minimum, the following features:

- Secondary containment around storage vessels and areas;
- Equipment and building layouts that incorporate provisions for safe access to and from the facility, as well as adequate access for fire fighting and other emergency equipment;
- Emergency lighting with back-up power supply;

2.3.9 Waste Generation and Disposal

The Project will implement a pollution prevention and solid waste management program and evaluate recycling opportunities. Recycling will be encouraged and supported through the on-site placement of appropriate containers. Solid waste and debris that cannot be recycled, reused or salvaged, will be stored in on-site dumpsters or similar containers for disposal. Programs will be developed to ensure potentially hazardous wastes are separated from normal waste including segregation of storage areas and proper labeling of containers. All waste will be removed from the site by licensed contractors and disposed of at approved facilities.

A minimal amount of solid waste will be generated during plant operations. Office and other facility wastes will be recycled to the extent feasible. Non-recyclable materials will be disposed of by a private contractor. Normal Project maintenance will generate small quantities of solid waste on a periodic basis. Depleted SCR catalyst will be sent back to the manufacturer or to a licensed recycling facility for recovery or disposal.

2.4 Financing and Schedule

2.4.1 Financing

The Project will be privately financed and the development risk rests solely with Brookhaven Energy. No use of state or federal funds is anticipated for development, construction or operation of the proposed Project. Decommissioning is addressed in Section 11, Land Use and Local Laws.

2.4.2 Project Construction

This section describes the Project schedule, construction sequence, and anticipated operation schedule. The current development timetable envisions construction mobilization beginning in late 2001, and commercial operation by late 2003. The total construction period is estimated to be approximately 24 months. The peak construction workforce is expected to be about 700 personnel per day, with a peak work force of approximately 650 employees on-site at any one time.

The construction sequence proceeds in a series of overlapping phases. It begins with site preparation work. This will include installing erosion and sedimentation controls, clearing, grubbing, and grading of the site and access road. Site preparation also includes excavation of the stormwater detention and infiltration basins and formation of drainage swales. These tasks will be conducted early in the construction schedule.

After site preparation, the delivery and installation of temporary buildings occurs, in order to house offices and worker locker rooms. An area will be set aside for

- Automatic shutdown systems with back-up power supply for the turbine control systems, fuel supplies and chemical systems;
- Fire-retardant building materials; and
- A comprehensive fire protection system.

First aid kits, eyewash stations, and safety showers will be provided at appropriate Project locations. In addition, a personal protective equipment program will be implemented for employees, contractors and visitors to minimize occupational hazards.

2.3.6 Fuel Supply

The Siting Board regulations require that the Application provide an assessment of the "reliability and feasibility of the preferred source(s) of power." 16 NYCRR 1001.1(b). Natural gas is the preferred fuel source. The limited use of a very low sulfur content (0.05%) fuel oil is also anticipated as a backup. The preliminary assessment of gas interconnection is found in greater detail in Section 5. Brookhaven Energy intends to have fuel supply and permitting arrangements such that the Project is able to operate at all times, 365 days per year.

2.3.7 Ancillary Services and Electric Transmission

The Siting Board regulations require that the Application provide a discussion of the "benefits and detriments" the Project would have "on ancillary services and the electric transmission system." 16 NYCRR 1001.1(c). The discussion of electric interconnection and the transmission System Impact Study (SIS) is found in Section 6 of this report. Other ancillary services – local water and local sewer – are discussed in Section 16. The Project site is situated approximately at the halfway point between Holbrook and Brookhaven substations. Holbrook is connected to Brookhaven by two 345 kV circuits (currently operated at 138 kV). The Long Island high-voltage transmission system is shown in Figure 2-1above.

2.3.8 Instrumentation and Controls

A sophisticated control system will be used to monitor and control the various plant processes. A central control room will be staffed with operators maintaining full plant control. The control system will be programmed to automatically control plant functions and alarm abnormal conditions. A Continuous Emissions Monitoring System (CEMS) will be used to monitor exhaust stack emissions. Local control systems will be provided for equipment that is operated manually.

temporary laydown and storage of facility materials and equipment. A gravel parking area will be constructed to serve workers and park construction vehicles when not in use. Temporary utilities (electric and phone) will be installed.

The next major steps in the construction sequence will be excavation, compaction and backfilling associated with the foundations for the plant buildings and underground pipes and conduits. Excavated materials will be stored on-site and reused as fill and topsoil material in final grading to the extent possible.

Immediately following excavation, the building foundations will be formed, rebar and conduit will be installed and concrete will be poured. At this juncture, approximately 6 months of the construction period will have elapsed.

Following site preparation and installation of foundations, erection of structural steel will begin. Concurrently, major equipment – gas turbines, steam turbines, generators and HRSGs – will be delivered and set in place. Field-erected tanks and vessels will be constructed. The labor-intensive process of installing a complex array of interconnecting piping, electrical and instrument wiring and ductwork will follow the setting of the major equipment. This is when the peak labor force will be required.

As the final connection of piping and wiring is nearing completion, the process of checking the electrical and control systems, starting up major equipment, cleaning pipelines, and testing all systems will begin.

The culmination of Project construction will be the firing and initial synchronization of the gas turbines and generators, followed by the production of steam, free blow of steam lines, and production of power from the steam turbines. Finally, integrated combined-cycle operation will commence, and the plant will enter a rigorous test and shakedown period, after which it will be placed into commercial service.

2.4.3 Project Operation

The Project will be designed to operate continually (24 hours per day, 7 days per week) to provide baseload power. The operational labor force will consist of approximately 25 full-time employees, with about half working the normal day shift. The remaining employees will perform shift work to maintain a 24-hour operation.

Plant operations and maintenance workers will be trained and qualified in accordance with industry standards and state requirements. In addition, specific training will be provided by ABB Alstom Power with regard to the GT-24 combined-cycle technology. Project operations and maintenance personnel will also be trained in the areas of environmental compliance, safety and fire protection.

3.0 ENERGY PLANNING AND ALTERNATIVES

3.1 Consistency with Energy Planning and Public Interest

3.1.1 Regulatory Applicability

In the Article X process, among the key findings that the Siting Board must make are whether or not the Project complies with state and local laws and whether or not environmental impacts have been adequately mitigated and public health and safety protected. The bulk of the Project's Application will address these requirements. The Application will also support two additional necessary findings: that the Project was selected pursuant to an approved procurement process; and that the Project is in the public interest.

The Article X statute and the Siting Board regulations require that Brookhaven Energy demonstrate the Project is reasonably consistent with the policies and long-range energy planning objectives and strategies contained in the most recent New York State Energy Plan *or* that the Project has been "selected pursuant to an approved procurement process."[2] PSL §168.2(a) and 16 NYCRR 1001.5. If the Project meets the latter standard, Brookhaven Energy will not be required to present certain types of alternatives (for example, detailed cost analyses). The Article X statute also requires a demonstration that the Project is "in the public interest." PSL §168.2(e).

3.1.2 Long-range Energy Planning and Objectives

The New York State Energy Planning Board releases and periodically updates the New York State Energy Plan (SEP) in order to provide strategic direction and policy guidance for energy-related decisions to be made in the public and private sectors. The most recent version of the SEP was published in November 1998. The objective of the plan is to provide the policy framework to assist state agencies and other energy-related organizations in making energy decisions that will contribute to a growing economy in a sustainable and environmentally sound manner.

The SEP indicates that siting of major electric facilities under Article X may be premised on a determination that the proposed facilities would promote or contribute to a competitive market for wholesale or retail provision of electricity. The 1998 SEP promotes competition as a long-range energy planning objective and strategy.

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2 An approved procurement process as defined by Article X means any electric capacity procurement process approved by the Commission and, subsequent to May 1, 1994, approved by the Commission as reasonably consistent with the most recent State Energy Plan.

In addition to the State Energy Plan, the Long Island Regional Planning Board published the "Energy Plan for Long Island, New York" in March 1991. This plan, written after the closing of the Shoreham nuclear power station, pre-dates the introduction of competition into the electricity supply market. However, it promotes, as policy, fostering independent power projects "by legislation favorable to independent power producers." It also recommends that Long Island "[a]ssure an increased supply of natural gas" by supporting "the Iroquois pipeline" (across Long Island Sound to South Commack), "the upgrade of the Iroquois pipeline, and any other pipelines to Long Island."[3]

In April 1999, the Long Island Power Authority initiated the "Long Island Choice" program. LIPA describes Long Island Choice as "a key element of Governor Pataki's and LIPA's objective to foster electric retail competition as a means to increase consumer choice and potentially generate additional cost savings for Long Islanders." Long Island Choice is being implemented in phases, with a goal that soon all Long Island residents and businesses will be eligible to choose among competing suppliers of electric generation. LIPA estimates that generation accounts for 30 percent of Long Islanders' electricity bill.[4] The proposed Project fits into this framework by offering its low-cost wholesale electricity to energy retailers who will market an electricity supply package to individual customers or aggregators of load.

3.1.3 Approved Procurement Process

On the basis of the 1998 SEP, certain applicants have petitioned the Public Service Commission for determinations that their market-based independent generation proposals satisfy the requirement of an approved procurement process. On August 18, 1999, the Public Service Commission ruled, based on petitions by Ramapo Energy Limited Partnership and Sithe Energies (dockets 99-E-0084 and 99-E-0089) that plants proposed to operate in the competitive electricity supply market will have been selected through an approved procurement process because wholesale electricity competition is reasonably consistent with the 1998 State Energy Plan. The PSC further ruled that future projects would not need to petition the PSC for rulings on a project-by-project basis, but rather left it up to the Siting Board to make a specific determination as to whether a particular project will operate in the competitive market, and therefore be a project selected pursuant to an approved procurement process.

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3 Long Island Regional Planning Board, *An Energy Plan for Long Island*, pp. 11-12.

4 LIPA web site describing Long Island Choice, http://www.lipa.state.ny.us/lichoicenew/lichoicepage1.html; LIPA press releases dated April 28, 1998, and April 14, 1999.

3.1.4 Construction and Operation in the Public Interest

One of the findings that the Siting Board must make prior to issuing a Certificate is that "the construction and operation of the facility is in the public interest, considering the environmental impacts of the facility" and the required evaluation of alternatives. PSL §168.2(e). Thus, the finding as to whether a project is in the public interest includes the necessary evaluation of the impacts of a specific facility's construction and operation. It is also based on the premise that the proposed Project would promote or contribute to a competitive market for wholesale or retail provision of electricity. Brookhaven Energy asserts that its construction and operation will be in the public interest for the following reasons:

- The proposed Project will be a merchant facility, unlike the regulated utility environment of the past, and will compete with other independent energy producers to supply power to the wholesale electric power market. Competition with other wholesale electricity suppliers allows the competitive retail market to reflect these cost savings to their customer base, including industrial, commercial, institutional and residential users.

- The proposed Project, consistent with the objectives of the 1998 SEP, will promote the continued economic growth and the development of energy industries on Long Island and within New York, through both the construction and operation phases.

- From the perspective of air emissions and environmental protection, the proposed Project will be among the cleanest in the world. Gas-fired combined-cycle plants are efficient, modern and reliable. Operation of the newer, modern power plants will inevitably displace operation of the plants they out-compete (older, less efficient plants), since electricity must be supplied instantaneously in order to meet demand, and cannot effectively be stored. For every MW-hour produced by the Project, a less efficient and more polluting MW-hour will no longer be produced somewhere within the New York power grid, most likely on Long Island.

3.2 Alternatives to be Studied

In accordance with the requirements of the Public Service Law and the Siting Board regulations this section presents a discussion of reasonable project alternatives that are being or have been considered. PSL §163.1(e) and 16 NYCRR 1000.4(c)2(v). The Siting Board regulations elaborate on the alternatives evaluation. 16 NYCRR 1001.2. The Application needs to provide an alternatives analysis in "sufficient detail," so that the Siting Board can make its findings. This analysis should account for the "objectives and capabilities" of Brookhaven Energy. Also, the "range of alternatives must include the no-action alternative"

16 NYCRR 1001.2(c). Several types of alternatives that may be applicable to the Project include "technology; scale or magnitude; design; timing; use; and types of action."

The alternatives that have been evaluated or will be evaluated by Brookhaven Energy include "no action," selection of the site, backup fuel use, ability to provide peaking service, air pollution control alternatives, size/magnitude, and timing.

3.3 No Action

Brookhaven Energy believes that the "no action" alternative is not reasonable.

First, the no action alternative assumes that the Project will not be constructed, while Brookhaven Energy has stated that it believes the Project to be in the public interest. The market-driven aspects of the deregulated environment have provided Brookhaven Energy with a commercial opportunity that will afford both it and the town of Brookhaven a chance for economic benefit through sound and environmentally responsible development.

Second, the Project is consistent with the 1998 SEP initiatives for New York to encourage competition in the wholesale electricity market.

Third, the development of modern power production facilities have potentially positive air quality benefits in two ways: 1) the purchase of NO_x and VOC offsets necessary under current air quality regulations increases the market demand for such offsets, which are generated by the shut-down or modernization of existing sources of NO_x and VOC emissions; and 2) the displacement of older, less efficient electric generation by modern, efficient units such as this Project. In short, the modernization of the power industry is beneficial from both an economic and environmental perspective.

Fourth, the no-action alternative would be in direct contradiction to the objectives of Brookhaven Energy, which are also to be considered. 16 NYCRR 1001.2(c).

The "no action" alternative would be inconsistent with the competitive market economics and environmental objectives of New York State, and is therefore not considered to be a reasonable alternative.

3.4 Site Selection

The choice of site is an important initial step in ensuring that a project be viable and as compatible with the environment and the surrounding community as possible. Article X applicants that have the power of eminent domain are required to address alternative sites. However, for applicants without the power of eminent domain,

such as Brookhaven Energy, the alternatives analysis "may be limited to parcels owned by, or under option to" the applicant. 16 NYCRR 1001.2(d)(2).

Brookhaven Energy does not own other parcels in New York State because its sole purpose is development of the proposed Project. Another entity affiliated with ANP is currently licensing a similar power plant, with four units as opposed to the proposed two-unit plant, at a site in Ramapo (Rockland County), Article X docket No. 98-F-1968. Thus, Brookhaven Energy is only required to address the Project site. However, because the Project site was chosen as a result of a rigorous site selection process, this section briefly describes the methodology of that process. Because of the competitive nature of the industry, this discussion is limited to the methodology employed, and specific sites are not identified.

Sites were identified and evaluated using a common set of principles. Wherever possible, sites were identified in zones as far as possible from any sensitive receptors or from concentrations of residences. This was deemed appropriate due, in part, to noise and aesthetic considerations. Only industrially zoned sites were evaluated.

The evaluation of each site addressed feasibility, environment, and land use. Feasibility criteria included the requirement for new gas and electric interconnection corridors, roadway access, the availability of water and wastewater service, site topography, and proximity to airports. Environmental criteria included surrounding terrain (flat terrain helps air dispersion), nearby surface waters, wetlands, groundwater protection, and potential of existing contamination at each site. Land use criteria included site size/buffering, agriculture/land-clearing requirements, compatibility with zoning and with existing land uses, proximity to residences or other sensitive receptors, and likely visibility. Further evaluation included possible transmission constraints, inquiries with town officials, and the willingness of landowners to sell or otherwise exchange site control. On the basis of these evaluations, the Project site was deemed to be the best. Having made that conclusion, the site was optioned for development by Brookhaven Energy.

3.5 Backup Fuel Use

The Project is proposed with a backup fuel, but an alternative is to pursue natural gas exclusively. No fossil fuel is as clean as natural gas. Using backup oil, however, would relieve the stress on the natural gas system during very cold weather, when gas demand is very high. Backup oil use also would ensure that while residences, schools, and hospitals are given first-order priority for gas supply, the Project's ability to operate is unimpeded. For this reason, the use of low-sulfur distillate oil as backup is an important reliability issue.

Brookhaven Energy has discussed or will discuss this issue with town leaders, state and local agencies including NYSDEC and the Suffolk County Department of Health

Services (DHS), and the public. It will continue to solicit input with respect to this issue as part of the Public Involvement Program. In the Application, Brookhaven Energy will present its alternatives analysis with respect to backup fuel use. The analysis will include project technology and viability, reliability, air quality, water use, and groundwater protection.

3.6 Peaking Capability

The proposed Project is suited to operate as a base load unit, but can also provide approximately 40 MW of peaking capacity above its base output. The Project can be designed so that high-pressure steam can be extracted from the steam lines between the HRSGs and the steam turbines, then injected into the combustion turbines for power augmentation. This capability could provide a valuable benefit during periods of peak electricity demand.

The advantages of operating the plant with peaking ability are as follows. First, the fuel consumption and air emissions when the Project is operating in peak mode would be less than those of a stand-alone peaking plant. Second, providing extra peaking capacity would obviate the need to pursue that peaking capacity at another site, which could be a new development site, with its own set of land use and environmental impacts. On the other hand, peaking capacity requires additional water. Steam injection for power augmentation during a summer day would increase demand by roughly 36,000 gph. It would be used only rarely and then for brief, intermittent periods.

Brookhaven Energy has discussed or will discuss power augmentation with town leaders, state and local agencies, and the public, as well as with the Suffolk County Water Authority. Brookhaven Energy will solicit input with respect to this issue as part of the Public Involvement Program. In the Application, Brookhaven Energy will present its alternatives analysis with respect to power augmentation. The analysis will be divided into project technology/reliability, air quality and water use.

3.7 Air Pollution Control Alternatives

The Clean Air Act requires alternatives analyses for BACT and LAER for all regulated pollutants. This comprehensive alternatives analysis will be included as part of the air quality permitting process within Article X.

3.8 Size and Magnitude

The size of a project is tied to conditions that prevail at the site. These include site size and the availability of transmission capacity. The proposed size of the plant – approximately 580 MW in the nominal peak case – is both large enough that

economies of scale can be gained and small enough that Brookhaven Energy does not anticipate significant upgrades along existing electric transmission corridors.

3.9 Timing

The proposed Project and several other projects around New York State that have been proposed since 1997 are largely due to market patterns and the opening of the electric market in New York to competition. The reason Brookhaven Energy is proposing this project at this time is to be able to compete in the wholesale electric generation marketplace.

4.0 PUBLIC INVOLVEMENT PROGRAM

4.1 Purpose

Brookhaven Energy has proactively launched a comprehensive public outreach campaign in compliance with New York State law. The Public Service Law and the Siting Board regulations require a Public Involvement Program (PIP) as part of the Article X process. A description of the PIP must be included as part of the Article X Application. PSL §163.3 and 16 NYCRR 1000.3. The intent is that a PIP "provides a variety of meaningful participation opportunities by which public concerns can be identified as early as possible in (and throughout) the various stages of the decision-making process, establishes communication between stakeholders and an applicant, and results in education of the public as to the specific project and the Article X process." 16 NYCRR 1000.2(q). At other projects developed by ANP affiliates, it has consistently been the company's philosophy to involve the public early in the process and to form an advisory or local liaison committee.

Prior to submitting this document, Brookhaven Energy undertook an effort to receive public comments, questions, recommendations and ideas concerning the Project. With the submission of this document, Brookhaven Energy invites the public, local and regional officials, as well as state and federal agencies to study the Project in further depth, so that the Application can more accurately respond to any questions and comments on a given subject. It should be remembered that community outreach is an ongoing and continuing effort. It is not limited to the permitting stage, but rather will continue through construction and then through operation. Outreach should last as long as the facility is in existence.

4.2 Elements of the PIP

The Siting Board regulations outline specific components of the Public Involvement Program. 16 NYCRR 1000.3(b). This PIP has been developed in accordance with these regulations and is designed to encourage early and continued participation in the siting, certification, construction, and operation of the proposed Project. This PIP includes the following elements:

Communications and Outreach Activities

- Stakeholder Identification
- Targeted Stakeholder Outreach
- Development of Educational Materials
- Media Outreach
- Community Presence
- Development of Evaluations Tools

Public Notification Activities

- Legal notices
- Notices posted on web page

4.3 Communications and Outreach Activities

The activities described below are intended to create a broad level of awareness about the Project and have been tailored to meet the needs of the public in the host community of the town of Brookhaven, New York.

4.3.1 Stakeholder Database

Through interviews, government research, media research, and Internet research Brookhaven Energy has identified and placed in a database over 300 individuals and organizations to target for outreach activities. Stakeholders that have been identified include local, state and federal elected and public officials, local civic and economic development organizations, neighbors, abutters, local, state and national environmental groups, the media and others. This database is used as a tool to track contacts and outreach activities as well as to facilitate phone and written contact when necessary. This database is a dynamic one that will evolve throughout the duration of the Project's development. The stakeholder database can be found in Appendix D.

4.3.2 Targeted Meetings and Outreach Activities

As an initial outreach activity, representatives from ANP met with various Brookhaven officials in August and September of 1999 and January of 2000. At that time, ANP had not formally decided to proceed with the Project. When the Project's viability was better established, ANP began to reach out to others to inform them of its intention to proceed with the project.

Brookhaven Energy has initiated a series of one-on-one meetings and small group meetings with agencies, interested groups, and individuals. A list of meetings can be found in Appendix E.

During these meetings, stakeholders posed a wide range of questions or comments regarding the Project. A brief synopsis of these questions is outlined in Appendix F. Responses were provided during these meetings to the fullest extent possible. In addition, educational materials (as described below) were distributed. Contact information was provided so that anyone interested could follow up with the Project Director and others on the Project team.

Brookhaven Energy will continue to identify key stakeholders who will be included in outreach and education efforts related to the permitting and development of the

Project. Brookhaven Energy will seek to proactively reach out and keep these stakeholders informed regarding the development of this facility.

- **Facility Touring.** Tours of ANP facilities in Massachusetts will be given to interested stakeholders to educate and familiarize them with an ANP combined-cycle natural gas-fired electric generating facility. Group or individual tours will be arranged. These tours will provide participants an opportunity to meet local officials in Massachusetts who have worked with ANP and understand the issues associated with hosting a facility like the proposed Project.

- **Speakers Bureau.** Brookhaven Energy has developed a standard presentation that provides an overview of the Project to present to local civic, environmental, religious, and community organizations. Brookhaven Energy will identify and schedule such speaking engagements throughout the permitting process.

- **Direct Mail.** As an additional means for reaching out to a large number of Brookhaven area residents, Brookhaven Energy will mail an introductory letter in early April to approximately 5,000 residents within an about a 2-mile radius.

- **Community Open Houses.** Throughout the permitting process community open houses will be held to allow citizens and stakeholders to learn more about the Project. Such events will allow those interested to come and learn more about the Project through a poster display depicting different issues associated with the siting, construction and operation of this facility. Experts will be on hand to respond to questions raised.

- **Community Events.** Brookhaven Energy will seek to have a presence at identified community events attended by large numbers of Brookhaven and area citizens. Such events would allow Brookhaven Energy to hand out information regarding the Project and to speak to those interested about the Project.

- **Public Meetings.** In conjunction with the Article X permitting process, a series of public meetings will be scheduled at key Project milestones.

4.3.3 Development of Outreach and Education Material

An initial step that Brookhaven Energy has undertaken in executing a PIP is the development of educational materials to inform the public and targeted stakeholders about the Project. These materials have been and will be designed for a variety of audiences and vary in scope and technical detail. Collateral materials include the following:

- **Fact Sheet.** This four-page document includes corporate and background information on the Project, including an overview of facility design details, and

an overview description of environmental issues and mitigation measures. A copy of the Fact Sheet can be found in Appendix B.

- **Company Brochure.** This brochure will provide general background about ANP, the parent company of Brookhaven Energy.

- **Power Point Presentation.** A Power Point slide presentation has been developed to provide a general overview of the Project. This presentation will be used in community outreach meetings to provide an overview of the Project. This presentation is likely to be updated and amended as the process continues and the Project details are developed. A copy of the current presentation being used can be found in Appendix B.

- **Project Graphics.** When possible, graphics such as charts, graphs, site maps, and aerial photographic simulations of the Project will be developed. A site locus map, project simulation (showing a more preliminary conceptual layout) and air emission chart have already been developed and can be found in Appendix B.

- **Answers to Frequently Asked Questions.** This fact sheet is formatted as responses to frequently asked questions. This is an effective method for responding to emerging issues and questions. The most current copy of the Answers to Frequently Asked Questions can be found in Appendix B.

- **World Wide Web Site.** A wide variety of background information regarding the project, contact information and current news will make up the contents of a project-specific World Wide Web site that has been created. Public documents will also be posted and updated on this Internet site, including the Article X Preliminary Scoping Statement, the proposed (and later the final) Stipulations, and the Article X Application (without some of the technical appendices). This site, http://www.brookhavenenergy.com, will be modified and updated throughout the Project in order to contain the most current information.

Additional outreach and education material will be developed and drafted as needed to ensure effective communication to stakeholders.

4.3.4 Media Outreach

Brookhaven Energy plans several media outreach initiatives in order to ensure that information is being communicated to the press and reported to the community. Ongoing media outreach consists of the following elements:

- **Press Releases.** In order to effectively inform the public on key Project milestones, press releases will be written and issued on a timely basis.

- **Press Packets**. Packets will contain a fact sheet and Project graphics to be distributed to media outlets.

- **Media Briefings and Editorial Board Meetings**. Brookhaven Energy has already held meetings with key media stakeholders at Newsday, Suffolk Life Newspapers, the Long Island Advance, the New York Times, and Cablevision. A list of meetings can be found in Appendix E. A few articles have been printed to date on the Project. These articles are attached in Appendix G. Briefings will continue to be scheduled at key intervals throughout the development, certification and construction of the Project.

- **Radio Talk Show Appearances**. If deemed appropriate, radio and public access television show appearances will be scheduled.

- **Publish Editorials and Letters to the Editor**. In order to respond to community questions and issues raised and to provide project updates, Brookhaven Energy will on occasion draft and submit guest editorials and letters to the editor to various print media outlets. As the Project development continues, these will be written on an as-needed basis.

4.3.5 Community Presence

The following is a description of the activities Brookhaven Energy has undertaken or will undertake to establish an open, ongoing presence in the Brookhaven community.

- **Local Liaison Committee**. In order to gain feedback on the Project proposal and plans to construct and operate an electric generating facility in Brookhaven, a local liaison committee will be created. This panel will be made up of individuals representing diverse interests in the community. This committee will meet on a regular basis throughout the development and construction phases of the Project.

- **Local Phone Number**. A local phone number has been set up (631-205-9741). This number will be widely publicized on all outreach materials and through additional means. With this local phone number anyone within the area is invited to make a toll free call anytime to pose questions or comments regarding the Project. This number is a direct line to the office of Robert Charlebois, Project Manager. If Mr. Charlebois is unable to answer a call, callers may leave a message. The goal is to return all calls within 24 hours of the next business day.

4.3.6 Evaluation Tools

In evaluating awareness of the Project and the effectiveness of information disseminated about the Project, Brookhaven Energy will utilize a number of evaluation tools.

- **Media Impressions**. Utilizing a communications industry standard formula, Brookhaven Energy estimates that newspaper pieces directly resulting from media activities will generate hundreds of thousands of impressions. An impression is considered to be one individual reading a newspaper piece one time. This number includes media coverage of the Project directly resulting from press releases, opinion editorials, letters to the editor, and public notices. Project-specific articles will be tracked.

- **Media Survey**. Because newspaper editorials and letters to the editor often act as a "barometer" of public opinion, Brookhaven Energy will continually survey, track and evaluate all local print media for expressed opinions about the Project.

- **Local Attorney**. Additionally, a local attorney, David Sloane, an attorney who has worked in Brookhaven for 35 years, has been hired to serve as a liaison to the Brookhaven community. In this role, Mr. Sloane will work to provide accurate, impartial information concerning local opinion and reaction to the Project.

4.4 Public Notification

As part of this initial public involvement plan, Brookhaven Energy will assure wide distribution of this Preliminary Scoping Statement. Certain designated individuals and groups must receive the Preliminary Scoping Statement by rule. 16 NYCRR 1000.5 and 1000.6. However, Brookhaven Energy has increased the hard-copy circulation of this Statement. A full distribution list including a list of the public libraries where copies have been sent is provided in Appendix C. Copies sent to libraries and other public display locations are formatted for easier reproduction.

Shortly, Brookhaven Energy will place a public notice in several local newspapers announcing the initiation of the stipulations process. Additional notices will be published when necessary to announce other key Project events and milestones.

Information and copies of important public documents will also be disseminated information on the Internet at *http://www.brookhavenenergy.com*. This site will be updated and maintained as warranted.

4.5 Proposed Stipulations

"Stipulations," or agreements as to the scope of the Application, help to define the issues of concern to agencies and the public. They specify the studies or programs of study that Brookhaven Energy will undertake in support of its Article X Application. Article X applicants are encouraged to enter into stipulations with DPS, NYSDEC, NYSDOH, and any other interested parties. PSL §163.4. The statute also encourages early consultation with the public before any stipulations are agreed to,

and wide distribution and formal notice of proposed stipulations to give the interested public an opportunity to comment.

Because there have been several merchant power plants recently proposed in New York State, the reviewing agencies and the various applicants have in many cases adopted a template for the stipulations that contains the specific requirements power plant applicants must study irrespective of the site. Thereafter, agencies and applicants have sought to tailor the stipulations template in an appropriate site-specific way, accounting for both site conditions and local public concerns. To date, Brookhaven Energy has used relevant paragraphs from the most recent available templates and has, to the best of its ability, adjusted the template to fit local conditions.

Consistent with both the statutory mandate and Brookhaven Energy's desire to disseminate the stipulations as broadly as possible, for comment and finalization as early as possible, proposed stipulations are set forth in Appendix A. Each stipulation covers a substantive area discussed in this Preliminary Scoping Statement. Brookhaven Energy asks the agencies and the interested public to please provide comment on them. Brookhaven Energy will gladly carry on detailed discussions regarding the studies that will form the basis of the Application, both with the agencies and the interested public. Brookhaven Energy anticipates that the Department of Public Service and other Article X regulatory staff will hold a public hearing on the proposed stipulations. Shortly after the filing of this Preliminary Scoping Statement, there will be a formal notice of that public hearing and a public comment period on the stipulations. Public notice of this hearing will be provided in newspapers of general circulation, through the Project web page, and probably the Article X web page, http://www.dps.state.ny.us/articlex.html.

5.0 FUEL SUPPLY

5.1 Applicability

For a merchant plant, gas supply issues are primarily a question of the developer's own procurement strategy. However, system reliability and the feasibility of the interconnection remain a concern that must be addressed per the Siting Board regulations. The Siting Board requires that the Application provide an assessment of the "reliability and feasibility of the preferred source(s) of power." 16 NYCRR 1001.1(b). The proposed plan of study is discussed in this section.

5.2 Fuel Supply Setting

5.2.1 Project Combustion Needs

For the Project, the proposed primary fuel is natural gas. It is anticipated that the Project will use approximately 95 MMcf of natural gas per day. The natural gas will be compressed to approximately 780 pounds per square inch gauge (psig) prior to being supplied to the combustion turbines. Because the Brooklyn Union system delivers gas at approximately 400 psig, an on-site compressor will be necessary.

For reliability purposes, the Project is proposed to have on-site a supply of backup fuel oil, which would have a very low sulfur content (0.05%), similar to transportation grade diesel fuel. The low-sulfur fuel oil would be brought to the site by trucks. Brookhaven Energy currently anticipates constructing approximately one million gallons in oil storage capacity.

5.2.2 Gas Delivery

The Brooklyn Union Gas system on Long Island currently serves 1.6 million customers with a 1,500 MMcf per day of sendout (peak day). The overall capacity of the system is sufficient to serve Long Island's wintertime demand of 300 to 400 MMcf per day[5].

The Project site is adjacent to a 20-inch Brooklyn Union Gas line. It is expected that on-site compression will be needed. After metering, the gas will pass through moisture separators, possibly a dewpoint heater, gas compressors, fine filters, efficiency heaters, and finally the combustion turbines.

5.2.3 Oil Delivery

The nearest oil pipeline delivery system to the Project site is the Holbrook oil terminal, approximately 5 miles west of the Project site. A TOSCO pipeline connects the Port Jefferson oil terminal and the Holbrook oil terminal. Another

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5 Keyspan Energy Press Release, January 18, 2000.

onshore facility is located in Riverhead. Brookhaven Energy anticipates that distributors would bring fuel oil to the site via the Long Island Expressway, using Exit 66 and the Project access road.

5.3 Information Requirements and Methodology

Brookhaven Energy and Brooklyn Union Gas have begun discussions, and Brookhaven Energy has requested an interconnection study (flow, capacity, and other types of system impact studies). Brookhaven Energy and Brooklyn Union will soon enter into an agreement for Brooklyn Union to conduct these studies in order to account for the proposed Project in its infrastructure planning. Brookhaven Energy will report the results of Brooklyn Union studies in the Article X process. In terms of environmental impact assessment, Brookhaven Energy proposes to study any off-site facility built exclusively for the Project's use or any off-site facility to the extent that it creates new rights-of-way, as described in Section 2.1 above. However, it is anticipated that upgrades would only affect existing facilities and will make use of existing rights-of-way. Environmental permitting for any upgrades, and mitigation where necessary, will be conducted by Brooklyn Union through independent permit filings.

5.4 Initial Impact Assessment and Mitigation

Brookhaven Energy does not anticipate any potentially significant adverse impacts to the natural gas system because upgrades will be designed to accommodate the Project as well as future system growth. Brookhaven Energy also anticipates no adverse impacts to oil distribution even during periods of high demand because of available storage facilities on Long Island.

Natural gas customers will not pay for Brookhaven Energy's upgrades through their rates. Brooklyn Union will define the upgrades required for the Project separately from other upgrades or maintenance in order to ensure that the capital cost of Project-related upgrades is applied to Brookhaven Energy.

6.0 ELECTRIC TRANSMISSION

6.1 Applicability

For a merchant plant, electric upgrade issues are primarily a question of the developer's own arrangements with the interconnecting utility. However, the Siting Board requires that the Application provide a discussion of the "benefits and detriments" the Project would have on the electric transmission system. 16 NYCRR 1001.1(b). The discussion of electric interconnection and the transmission System Impact Study is found in this section. Electric and magnetic fields are also addressed below.

6.2 Project Output and Existing System

6.2.1 Project Output

The Project's boundary parallels two LIPA transmission lines, currently operated at 138 kV, but constructed to operate at 345 kV. Brookhaven Energy expects that the Project's electric output will be stepped up to 138 kV and will interconnect to one or both of the lines. Combustion turbine output varies depending upon temperature. At full load during very hot weather, output will be less than at moderate conditions. During cold weather, output will be greater.

6.2.2 Long Island Power Authority Transmission System

The Long Island Power Authority (LIPA) operates the transmission and distribution systems in Nassau and Suffolk counties. The 138 kV lines in the system are shown in Figure 2-1. Last year, LIPA delivered an average of approximately 47 GWh of electricity per day. Currently, LIPA is expanding its transmission system in eastern Suffolk County. It is licensing (under PSL Article VII) a 22.5-mile underground 138 kV transmission line between Riverhead and Southampton, after unprecedented load growth in the South Fork.

6.3 Information Requirements and Methodology

Brookhaven Energy has requested that LIPA and the New York Independent System Operator (NYISO), a non-profit entity that is responsible for the state's transmission system, conduct a system impact study (SIS) for the Project's interconnection with the LIPA system. The study will be done using the Interconnection criteria established by NYISO, the NPCC "Basic Criteria for the Design and Operation of Interconnected Systems" and the "Standards for Planning and Operating the New York Power Pool Bulk Power System". The thermal, stability, voltage and short circuit effects on the system will all be studied. The scope of the SIS will be circulated to staff of the Department of Public Service, and appropriate personnel at NYISO and the Transmission Planning and Advisory Subcommittee of NYISO. The

results of these studies will identify any needed upgrades to the transmission or substation equipment in order to reliably interconnect the plant. The preferred interconnection configuration and any associated upgrades will be presented in the Article X Application. They will be based in large part on the findings of the SIS.

In terms of environmental impact assessment, Brookhaven Energy proposes to study any off-site facility built exclusively for the Project's use or any off-site facility to the extent that it creates new rights-of-way, as described in Section 2.1 above. However, it is anticipated that upgrades would only affect existing facilities and will make use of existing rights-of-way. If any environmental permitting for upgrades is required, it will be conducted by LIPA through independent permit filings.

6.4 Initial Impact Assessment and Mitigation

The Project is expected to enhance reliability of the transmission system within the Long Island load pocket and will provide needed capacity for central and eastern Suffolk County, where rapid load growth is occurring. Until the SIS is completed, it will not be possible to state if any transmission upgrades will be necessary.

6.5 Electric and Magnetic Fields

6.5.1 Description of EMF

The transmission of alternating current (ac) electricity produces electric and magnetic fields. Electric fields are produced by the *voltage* of a power line. Their strength is directly related to the voltage difference between the conductors and the ground and nearby objects. The strength of electric fields is typically measured in units of kilovolts per meter (kV/m). The *current* flowing through power lines or other conductors generates a magnetic field. Magnetic fields are typically expressed in units of milligauss (mG). Electric and magnetic fields are commonly referred to by the abbreviation EMF.

Public and regulatory attention has been drawn to some research studies that have suggested the need for additional evaluation and research to consider the possibility that long-term exposure to electric and magnetic fields might pose health risks. Although all devices using or transporting electricity are sources of such fields, to date most attention has been focused on the most obvious sources such as utility power lines, home appliances, and industrial devices.

6.5.2 New York State's EMF Regulatory Standard

While scientific evidence and/or health considerations are not directly the basis for regulatory limits on EMF, the Public Service Commission established a guideline based on prudent avoidance – not causing any EMF greater than the levels experienced at existing transmission lines in New York State. The point of

measurement (and the point where EMF limitations apply) is at the edge of a transmission line right-of-way. The limits set by the PSC are:

- 1.6 kV/m for electric fields (established by PSC Opinion 78-13), and
- 200 milligauss for magnetic fields (established by the *Interim Policy Statement on Magnetic Fields*, dated September 11, 1990) measured at the edge of a transmission line right-of-way.

6.5.3 Information Requirements and Methodology

Brookhaven Energy will take measurements of EMF at the Project site. In addition, it will calculate electric and magnetic field levels at the edges of relevant transmission line rights-of-way. The calculated EMF will be compared to the New York State regulatory guidance cited above.

6.5.4 Initial Impact Assessment and Mitigation

Compliance with the above-cited standards will be a requirement, whether in the Article X Siting Board process or in any Public Service Commission filing by LIPA. Mitigation measures can include, to the extent practical, physical designs that minimize EMF.

7.0 AIR QUALITY AND METEOROLOGY

7.1 Applicability

This section addresses the Project's effect on local and regional air quality. Regulatory programs related to air emissions control are outlined. A description of the proposed air quality impact assessment is presented.

As part of the Application, the Project will demonstrate that it will be among the cleanest plants in the world, with minimal air emissions relative to the amount of power it produces. During the course of its licensing, concurrent with the Article X process, the Project will apply for a Prevention of Significant Deterioration (PSD) Permit from NYSDEC, to which EPA has delegated its authority under the Clean Air Act.

7.2 Background Ambient Air Quality, Meteorology and Climatology

7.2.1 Background Ambient Air Quality

Ambient air quality data (ambient pollutant concentrations) collected from NYSDEC monitoring stations closest to the Project site have been used to characterize existing local air quality conditions. The monitoring stations used for each pollutant are summarized in Table 7-1. The latest 3 years of data available for each of these sites from NYSDEC's Air Quality Reports (1996 through 1998) are presented in Table 7-2. For each pollutant, Brookhaven Energy's analysis will conservatively be based on the highest background pollutant levels listed for these 3 years.

Table 7-1: Regional NYSDEC Air Quality Monitoring Stations

Pollutant	Monitoring Station
Ozone (O_3)	Riverhead (5155-01)
Sulfur dioxide (SO_2)	Babylon (5150-02)
Nitrogen dioxide (NO_2)	Eisenhower Park (2950-10)
Carbon monoxide (CO)	Eisenhower Park (2950-10)
Particulate matter <10 μ (PM_{10})	Babylon (5150-01)
Total suspended particulates (TSP)	Oyster Bay (2952-05)
Lead (Pb)	Greenpoint (7095-01)

Table 7-2: Summary of NYSDEC Regional Air Quality Monitoring Data

Pollutant	Averaging Period	1996	1997	1998	Proposed Background	National Ambient Air Quality Standard ($\mu g/m^3$)
O_3 (ppm)	1-hour	0.116	0.129	0.109	0.129 (253 $\mu g/m^3$)	235
SO_2 (ppm)	3-hour	0.050	0.046	0.056	0.056 (147 $\mu g/m^3$)	1,300
	24-hour	0.025	0.029	0.034	0.034 (89 $\mu g/m^3$)	365
	Annual	0.008	0.006	0.007	0.008 (21 $\mu g/m^3$)	80
NO_2 (ppm)	Annual	0.026	0.025	0.022	0.026 (49 $\mu g/m^3$)	100
CO (ppm)	1-hour	6.6	8.4	5.6	8.4 (9,622 $\mu g/m^3$)	40,000
	8-hour	4.9	4.7	4.0	4.9 (5,613 $\mu g/m^3$)	10,000
PM_{10} ($\mu g/m^3$)	24-hour	40	39	40	40	150
	Annual	18	19	19	19	50
TSP ($\mu g/m^3$)	24-hour	60	61	66	66	250
	Annual	27	29	25	29	75
Pb ($\mu g/m^3$)	Quarterly	0.16	0.16	0.14	0.16	1.5

Note: Concentrations for short-term averaging periods (24-hour and less) are based on highest second-highest measured concentrations.

7.2.2 Precipitation and Temperature

Average annual precipitation in the Project area is 45.19 inches, on the basis of National Weather Service observations taken from 1951 to 1973 at Riverhead. As shown in Table 7-3, average precipitation amounts are relatively consistent from month to month, ranging from 2.92 inches in June to 4.57 inches in December.

Table 7-3: Monthly Precipitation Averages

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Precipitation (in.)	3.35	3.89	4.34	3.81	3.55	2.92	3.38	4.19	3.41	3.32	4.46	4.57

Source: "*Climate of New York,*" June 1982, published by the National Climatic Data Center of the National Oceanic and Atmospheric Administration.

The average annual temperature is 52°F. The coldest months are December through March, with an average temperature of 34°F during this period. The average temperature for the warmest 4-month period, June through September, is 70°F. The lowest recorded temperature is -2°F, and the highest recorded temperature is 98°F. The range of expected ambient conditions will be considered in the dispersion modeling analysis. Table 7-4 provides monthly averages of maximum, mean, and minimum temperatures.

Table 7-4: Monthly Average Temperatures

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Daily Max (°F)	37.9	39.4	46.2	54.2	69.1	78.2	82.6	81.4	76.9	65.0	53.2	42.3
Daily Min (°F)	23.9	25.0	31.0	39.1	48.4	58.2	63.6	63.0	57.3	47.3	37.7	28.3
Daily Mean (°F)	30.9	32.2	38.6	48.7	56.8	68.2	73.2	72.2	66.1	56.2	45.5	35.3

Source: "*Climate of New York,*" June 1982.

7.2.3 Wind Speed and Direction

Air quality dispersion models use wind speed and direction data. According to NYSDEC Air Guide 26, modeling analyses should utilize 5 years of the closest, most recent National Weather Service observations. Long Island-MacArthur Airport in Islip, New York, is situated approximately 8 miles west of the Project site and records meteorological observations, 24 hours daily. Figure 7-1 shows the frequency distribution of wind speed and direction for the Project area for the period 1991 through 1995. The data show a persistence of winds from the southwest with a secondary component from the north. Winds from the west and northwest are also commonplace.

7.3 Regulatory Requirements

NYSDEC and EPA have promulgated air quality regulations that establish ambient air quality standards and emission limits. These regulations include: (1) National Ambient Air Quality Standards (NAAQS) and New York Air Quality Standards (NYAQS); (2) New Source Review (NSR) requirements for major sources and modifications, including Prevention of Significant Deterioration (PSD) review and Nonattainment NSR (NNSR); and (3) New Source Performance Standards (NSPS). These standards and limits impose design constraints on new or modified emission sources and provide the basis for an evaluation of the potential impacts of proposed projects on ambient air quality.

7.3.1 National and New York Ambient Air Quality Standards

EPA has established NAAQS for six air contaminants, known as criteria pollutants, for the protection of public health and welfare. These criteria pollutants are sulphur dioxide (SO_2), particulate matter having a diameter of 10 microns or less (PM_{10}), nitrogen dioxide (NO_2), carbon monoxide (CO), ozone (O_3), and lead (Pb). EPA has set both primary and secondary NAAQS. Primary standards protect human health while secondary standards protect public welfare from known or anticipated adverse

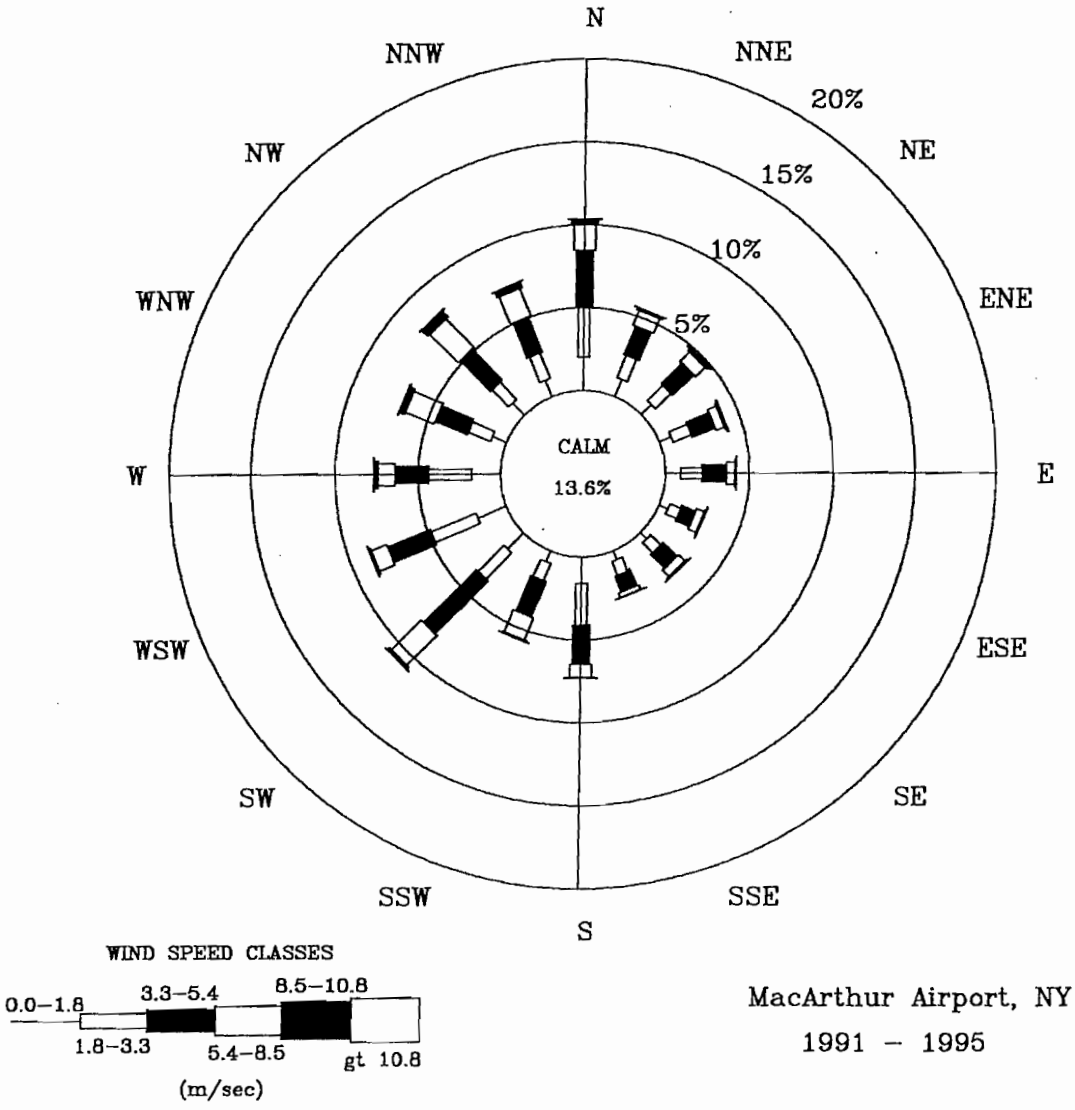

Figure 7-1: Annual Windrose Diagram for Long Island MacArthur Airport (1991-1995)

effects associated with the presence of air pollutants, such as damage to property or vegetation. EPA has established both short-term and long-term standards. NYSDEC has adopted these limits as the NYAQS. See Table 7-5.

Table 7-5: National and New York Ambient Air Quality Standards and Significant Impact Levels

Pollutant	Averaging Period	NAAQS and NYAQS ($\mu g/m^3$)		PSD Significant Impact Levels ($\mu g/m^3$)
NO_2	Annual [1]	100	Same	1
SO_2	Annual [1]	80	--	1
	24-hour [2]	365	--	5
	3-hour [2]	--	1,300	25
PM_{10}	Annual [4]	50	--	1
	24-hour [3]	150	--	5
CO	8-hour [2]	10,000	Same	500
	1-hour [2]	40,000	Same	2,000
O_3	1-hour [3]	235	Same	--
Pb	3-month [1]	1.5	--	--

[1] Not to be exceeded.
[2] Not to be exceeded more than once per year.
[3] Not to be exceeded more than an average of 1 day per year over 3 years.
[4] Not to be exceeded by the arithmetic average over 3 successive years.

Source: 40 CFR 50 and 6 NYCRR 257

7.3.2 Non-Attainment Area New Source Review (NNSR)

One of the basic goals of federal and state air regulations is to ensure that ambient air quality, including the impact of existing sources and new sources, complies with ambient standards (i.e., NAAQS and NYAQS). Toward this end, EPA has classified all areas of the country as either "attainment," "nonattainment," or "unclassified" with respect to the ambient standards. If an area is designated "nonattainment" for a given pollutant, then major new sources or major modifications of existing sources of the nonattainment pollutant are subject to NNSR. The NNSR regulations have more stringent requirements for source emission rates, including application of controls to achieve Lowest Achievable Emission Rate (LAER). The proposed new or modified source must also offset potential emissions of the subject pollutant(s).

If an area is "attainment" or "unclassified" for a particular pollutant, then new major sources or major modifications of existing sources require permitting under the PSD program. PSD permitting requires application of Best Available Control Technology (BACT) and a NAAQS compliance demonstration for subject pollutants.

The Project site is in an area designated as either attainment or unclassified for SO_2, NO_2, CO, Pb, and PM_{10}. It is in an area of "severe nonattainment" for ozone. The

severe ozone nonattainment area covers Long Island, New York City, and Westchester County. It is anticipated that the Project will have potential NO_x emissions and VOC emissions each greater than 25 tons per year (tpy). Therefore, it will be subject to NNSR for both NO_x and VOC.

New York's NNSR program (6 NYCRR 231) will require the Project to:

- Install pollution controls to implement Lowest Achievable Emission Rate for NO_x and VOC; and
- Obtain offsets equal to 1.3 times its maximum potential NO_x emissions.

7.3.3 Prevention of Significant Deterioration (PSD) Review

PSD review is a federally mandated program for major new sources or major modifications to existing major sources of regulated pollutants. A new source that exceeds the major source threshold for one pollutant must also meet the PSD requirements for the other pollutants that exceed their respective significant emission rate. Federal regulations stipulate that major sources must apply BACT controls for all PSD-applicable pollutants. EPA has delegated PSD review authority to NYSDEC.

A summary of the PSD major source thresholds and significant emission rates for a new combined-cycle generating facility is provided in Table 7-6.

Table 7-6: PSD Major Source Thresholds & Significant Emission Rates

Pollutant	PSD Threshold Criteria (tpy)	PSD Significant Emission Rate (tpy)
Nitrogen Oxides (NO_x)	100	40
Sulfur Dioxide (SO_2)	100	40
Total Particulate (TSP)	100	25
PM_{10} (PM <10 μm)	100	15
Carbon Monoxide (CO)	100	100
Volatile Organic Compounds (VOCs)	100	40
Lead (Pb)	100	0.6
Sulfuric Acid Mist (H_2SO_4)	100	7

It is anticipated that the Project will have potential emissions of NO_x CO, SO_2, TSP and PM_{10} each greater than 100 tpy. Therefore, BACT analysis will be required for these pollutants. Emissions of all other pollutants are expected to be below their

respective PSD significant emission rates, and therefore, those pollutants will not be subject to the requirements of PSD.

The PSD regulations require: 1) application of BACT for each regulated pollutant that will be emitted in significant amounts; 2) analysis of impacts to ambient air quality; and 3) analysis of impacts on soils, vegetation, visibility and growth.

For those pollutants for which the Project is subject to PSD review, the federal PSD Program specifies that pre-construction monitoring may be required. EPA has established PSD monitoring threshold concentrations known as monitoring exemption levels. If the predicted Project impacts are below these monitoring exemption levels, then the Project is eligible for exemption from pre-construction ambient monitoring. It is anticipated that the predicted impacts of NO_x, VOC, SO_2, CO, TSP, and PM_{10} will be below the monitoring exemption levels.

7.3.4 New Source Performance Standards

Federal New Source Performance Standards regulate the amount of air contaminants that may be emitted from specific processes. Emission limitations generated by the PSD and NNSR programs are generally far more stringent than NSPS, so the Project will easily comply with NSPS.

Applicable federal emission regulations include NSPS for gas turbines as documented in the Code of Federal Regulations (CFR) at 40 CFR 60 Subpart GG, "Standards of Performance for Stationary Gas Turbines." The NSPS Subpart GG restricts NO_x emissions to a nominal value of 75 parts per million dry volume (ppmvd) at 15 percent O_2 (about 0.3 lbs/MMBtu) for an electric utility gas turbine of 100 MMBtu/hr or more. The NSPS provides for a heat rate correction allowing somewhat higher NO_x emission rates for turbines with thermal efficiencies greater than 25 percent. The NSPS further provides a correction allowing higher NO_x emission rates for fuel-bound nitrogen. Both of these factors would increase the applicable NSPS standard to above 75 ppmvd NO_x. The NSPS also limits SO_2 emissions to 150 ppmvd corrected to 15 percent O_2 and restricts fuel sulfur content to 0.8 percent by weight.

7.3.5 Title IV Sulfur Dioxide Allowances

According to 40 CFR 72, the Project will be designated as a Phase II Acid Rain "New Affected Unit" 90 days after commencement of commercial activities. An application for the Project's acid rain permit will be submitted as required. The Acid Rain Program aims to reduce SO_2 emissions from power plants by allocating a limited number of marketable allowances to existing power plants and by requiring all plants, including new plants that were not allocated allowances, to obtain allowances to offset their actual annual SO_2 emissions. Because the Project is fueled

primarily with natural gas and because the proposed backup fuel oil will have only a 0.05 percent sulfur content; the Project's expected SO_2 emissions will be much smaller than existing conventional power plants.

7.3.6 New York State Air Regulations

7.3.6.1 Fuel Sulfur Content

NYSDEC limits sulfur in oil and solid fuels (6 NYCRR 225-1.2). The Project's proposed use of 0.05 percent sulfur fuel oil will be below these sulfur content limits.

7.3.6.2 Particulate Matter Emissions

6 NYCRR 227-1.2 limits PM emissions from stationary combustion projects that fire oil or solid fuels. PM emissions from the Project will be limited based upon the results of the BACT analysis required under the PSD program.

7.3.6.3 Opacity

Under 6 NYCRR 227-1.3, stationary combustion installations may not have emissions that exceed 20 percent opacity (6-minute average) except for one 6-minute period per hour that may not exceed 27 percent opacity. The Project will comply with these opacity limits during normal, steady-state operation by firing natural gas as the primary fuel and employing good combustion practices.

7.3.6.4 NO_x Reasonably Available Control Technology (RACT)

NO_x emissions from natural gas-fired combined-cycle combustion turbines are limited to 42 ppmvd at 15 percent O_2 (6 NYCRR 227-2). Additionally, NO_x emissions must be continuously monitored with an approved Continuous Emissions Monitoring System (CEMS). The Project is subject to LAER controls for NO_x emissions because it will have potential emissions greater than 25 tpy and is located in a severe ozone nonattainment area. The NO_x LAER emission rate for the Project will be well below the NYSDEC NO_x RACT limit. The Project will install and operate a NO_x CEMS.

7.3.6.5 NO_x Budget Program

The Project will be subject to the NYSDEC NO_x Budget Rule (6 NYCRR 227-3), a NO_x allowance program designed to limit statewide NO_x emissions during the ozone season (May-September). As a new budget source, which will begin operation after May 1, 1999, the Project will receive each year a quantity of NO_x allowances from the New York State's New Budget Source Holding Account. In the event that there

are not sufficient allowances in the New Budget Source Holding Account to cover the source's actual emissions, then the Project will secure additional allowances in the marketplace.

7.3.6.6 Title V Operating Permit

The Project will be subject to NYSDEC's Title V Operating Permit Program (6 NYCRR 201-6). This program ensures that a project's air emissions comply with its permitted limits. As a new stationary source, the Project will be required to submit a Title V permit application within 1 year after commencement of operation. However, under New York's permit to construct regulations, a new major source must obtain a permit to construct and operate prior to construction. This permit may serve as the operating permit if the Title V application for the facility is submitted well in advance of the timeframe described above. To meet New York's permitting requirements, the Project will submit completed Title V application forms with the PSD permit and Article X applications.

7.3.7 New York Air Toxics Program

NYSDEC Air Guide 1 provides guidelines for the control of toxic ambient air contaminants. Air Guide 1 requires each project to provide an assessment of the ambient air quality impacts of air toxics emissions. The predicted impacts are then compared to the applicable short-term and annual guideline concentrations (SGC and AGC) identified in Air Guide 1.

In addition, NYSDOH requires a health-based assessment of predicted impacts for emissions of air toxics. Specifically, NYSDOH requires an assessment of Project impacts with respect to health-based threshold limits published in the following references:

- EPA's Integrated Risk Assessment System;
- EPA's Annual Health Effects Summary Tables;
- EPA's National Center for Environmental Assessment; and
- United States Department of Health and Human Services, Agency for Toxic Substances and Disease Registry.

Air toxics concentrations resulting from the Project will be evaluated against the above-referenced thresholds.

7.3.8 New York Acid Deposition Control Act

The Project will be subject to the state's Acid Deposition Control Act. The Act requires that Brookhaven Energy quantify the proposed Project's contribution to the

New York State total deposition of sulfates and nitrates. Acid deposition impacts from the Project will be evaluated in accordance with NYSDEC guidance (see Section 7.5.2).

7.3.9 Suffolk County Air Pollution Control Code

Article 9 of the Suffolk County Sanitary Code requires a county permit for any new air contaminant source. The code also contains a general prohibition against air contaminants that are "or may be detrimental to the health, safety, welfare or comfort of any person." Brookhaven Energy's understanding, on the basis of conversations with the Suffolk County Department of Health Services (DHS), is that the review being undertaken for the Project, including New Source Review and the state air toxics program, will be sufficient to demonstrate that the Project will meet the requirements of the Suffolk County Air Pollution Control Code.

7.4 Air Emissions and BACT/LAER Analyses

The following sections provide a review of the air emissions and controls for the Project.

7.4.1 BACT/LAER Methodology

LAER is defined as "the most stringent emission limitation contained in the implementation plan of any state for such class or category of source unless the owner or operator of the proposed source demonstrates that such limitations are not achievable, or the most stringent emission limitation achieved in practice by such class or category of source." The Project must implement LAER controls for emissions of NO_x and VOC.

A BACT analysis is required for each PSD subject pollutant. BACT is defined in the PSD regulations as "an emissions limitation... based on the maximum degree of reduction for each pollutant subject to regulation... which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental and economic impacts and other costs, determines is achievable... through application of production processes or available methods, systems and techniques... for control of such pollutant."

EPA and NYSDEC require a "top-down" approach to BACT analysis. The process begins with the identification of control technology alternatives for each pollutant. Technically unfeasible technologies are eliminated and the remaining technologies are ranked by control efficiency. These technologies are evaluated based on economic, energy and environmental impacts. If an alternative, starting with the most stringent, is eliminated based on these criteria, the next most stringent technology is evaluated until BACT is selected.

BACT for NO_x will be the implementation of LAER controls as described above. Emissions of other PSD subject pollutants will be minimized through utilization of natural gas as the primary fuel for the Project and good combustion practices. The BACT/LAER analysis will present the results of the evaluation of alternative control technologies focusing on recently issued permits for similar facilities, and levels "demonstrated in practice" at other facilities, including review of EPA's RACT/BACT/LAER Clearinghouse.

In addition to the combustion turbines, the BACT/LAER analysis will consider the appropriate control technology for application to other ancillary emissions sources on-site, which are anticipated to be two diesel-fired emergency generators, a diesel fire pump, and natural-gas fired dewpoint heaters.

7.4.2 Criteria Pollutant Emissions

Criteria pollutant emissions from the Project will be minimized through use of intrinsically clean fuels, implementation of LAER controls for NO_x and VOC, and BACT for CO, SO_2 TSP, and PM_{10}. Annual emission estimates for the Project will include emissions associated with operation of the emergency generators, fire pump, and dewpoint heater, in addition to the combustion turbines. Criteria pollutant emission rates and stack parameters for the full range of normal operating conditions for the combustion turbines and ancillary sources will be developed as part of the Application.

7.4.3 Non-Criteria Pollutant (Air Toxics) Emissions

Emissions of air toxics from the Project will comply with NYSDEC Air Guide 1 as well as the NYSDOH health based standards.

7.4.4 NO_x Emission Reduction Credits

6 NYCRR 231 requires the Project to obtain Emission Reduction Credits (ERCs) to offset the maximum potential emissions of NO_x by a ratio of 1.3:1.0. NYSDEC has developed a mechanism to track generation and use of ERCs for offsets for new sources in conjunction with 6 NYCRR 227-3, *Pre-2003 Nitrogen Oxides Emission Budget and Allowance Program.* Any creditable reductions in emissions, documented in accordance with 6 NYCRR 227-3 and 231, are posted in an ERC Registry. Sources may transfer available credits listed in the ERC Registry in accordance with 6 NYCRR 227-3.8.

With respect to ozone nonattainment areas, Part 231 requires that this Project obtain its ERCs from within its ozone nonattainment area or from a location in another nonattainment area if the emissions in that area would contribute to the nonattainment in the area of the Project. A review of the ERC Registry indicates that over 3,720 tons of NO_x ERCs and 1,075 tons of VOC ERCs were available in the

severe ozone nonattainment area as of March 15, 2000. Part 231 requires the applicant to identify each emission source to be used to provide the necessary ERCs prior to the date of issuance of the permit.

7.5 Air Quality Impact Assessment

This section discusses the air modeling that will be used to quantify impacts to local and regional air quality. An air dispersion modeling protocol detailing the specific procedures that will be used for the analysis will be submitted for approval to NYSDEC, DPS, NYSDOH, and the EPA.

7.5.1 Methodology

This section describes the procedures that are proposed for conducting the air quality modeling analysis, including the models to be employed, the model input options, and the supporting data. The purpose of the air quality impact analysis is to assess Project air quality impacts against applicable state and federal ambient air quality standards, PSD increments, significance levels, and state guideline concentrations.

7.5.1.1 Model Selection

A refined modeling analysis will be conducted using 5 years of meteorological data and refined terrain elevations. Refined modeling will be conducted using the EPA Industrial Source Complex Short-term (ISCST3) model. In accordance with EPA's Guideline on Air Quality Models (revised) (40 CFR 51 Appendix W), this model is the most appropriate to address the proposed Project for simple (below stack-top) terrain. The ISCST3 model will evaluate Project emissions using 5 years of actual hourly meteorological data collected at the Long Island MacArthur Airport (ISP) in Islip, New York, located about 8 miles west of the Project site.

The SCREEN3 model will be used to evaluate the Project's impact at complex terrain, which is defined as terrain above plume height elevation. Intermediate terrain (terrain between stack top and plume height) will be evaluated with both SCREEN3 and ISCST3. The maximum predicted impact with either model will be used for demonstration of compliance at intermediate terrain receptors. The SCREEN3 modeling will only be conducted for a hypothetical "worst-case" meteorological condition. The condition required by EPA procedures and used by SCREEN3 is a stable atmosphere (F stability) and a, 6-hour wind persistence over a 24-hour period at a wind speed of 2.5 m/s. Rural dispersion coefficients, ground level receptors, and an ambient temperature equivalent to each combustion turbine operating case will be used.

7.5.1.2 Stack Height Optimization Analysis

"Good Engineering Practice" (GEP) Guidelines provide a method for determining a calculated guideline formula height for a stack based on the dimensions of the "controlling" structure. GEP stack height is the stack height defined by EPA that will mitigate potential downwash effects from nearby structures. GEP stack height will be determined using EPA's Building Profile Input Program (BPIP). The Project may propose to install stacks below GEP stack height for aesthetic reasons (see Section 8.6.4). If the proposed stack height is less than the GEP stack height, then building downwash will be considered during the modeling analysis. Selection of the optimum stack height for the Project is based on balancing the increased dispersion potential associated with increasing the stack height against minimizing the visual impact associated with the stack as a visible structure.

If any emissions are released from source points that are less than GEP height (for example, if Brookhaven Energy lowers the stacks for aesthetic reasons), the potential for emissions being entrained into the recirculation zone (cavity) will be considered. The cavity analysis will be conducted using the SCREEN3 model, which provides the length of the cavity and recirculation zone concentrations for non-GEP stacks. The structures to be evaluated will be based on those identified by the BPIP results as "controlling" (by flow vector). Initially, it will be determined if Project building cavity lengths extend beyond the facility's fenceline. If they do not, then no further analysis will be conducted. If the cavity does extend beyond the facility's fenceline, then maximum predicted cavity concentrations will be evaluated for compliance.

7.5.1.3 Receptors

A refined polar receptor grid centered on a location near the center of the Project will be developed. Receptors will be located every 10 degrees at the following distances:

- At 100-meter intervals from 100 to 1,000 meters;
- At 200-meter intervals from 1,000 to 2,000 meters;
- At 500-meter intervals from 2,000 to 5,000 meters; and
- At 1,000-meter intervals from 5,000 to 20,000 meters.

Further, the refined receptor grid will include fenceline receptors spaced at 200-foot intervals around the site. Receptors on the grid (as defined above) within the fenceline will not be evaluated. Since the Project is not within 100 km of a Class I area, no receptors at Class I areas will be used.

Terrain elevations at receptors will be obtained using Earth Tech's TERREL program and USGS 30-meter digital terrain data. For USGS quadrangles where

30-meter data are not available, 90-meter digital terrain data will be used. For the near-field receptors (out to 1,000 meters), receptor elevations will also be selected manually using USGS maps. The highest elevation around each receptor will be selected (i.e., the area around each receptor to the midpoint with adjacent receptors).

A set of discrete receptors, located at terrain peaks in the Project area, will also be manually identified and added to the receptor grid to ensure the highest terrain in the area is accurately represented.

7.5.1.4 Impact Assessment

Refined pollutant concentrations will initially be compared to the Significant Impact Levels (SILs) for criteria pollutants. If model predicted maximum concentrations are less than corresponding SILs, then compliance will be demonstrated and no additional modeling with other regional sources is required. If predicted impacts exceed the SILs, interactive source modeling will be conducted, as necessary, to demonstrate compliance with the applicable ambient air quality standards and PSD increments.

7.5.1.5 PSD Additional Impact Analyses.

The PSD regulations require that additional impact analyses be conducted to consider the affects on visibility, on soils and vegetation, and the potential for and impact of secondary economic/population growth.

A quantitative visibility analysis will be conducted using the EPA VISCREEN program (Version 1.01 dated 88341) for the nearest Class I Area. A Level-1 analysis is proposed. The nearest Class I Area to the Project is the Brigantine National Wildlife Refuge in New Jersey (over 150 km to the southwest). Background information and a description of the model is detailed in the EPA Visibility Workbook (EPA 1992). The VISCREEN modeling will evaluate maximum particulate and NO_x emissions from the Project. Results of the modeling will be compared to the VISCREEN default visibility thresholds.

The construction and work force for the Project is not expected to cause substantial in-migration, and no new significant emissions from secondary growth during either operations or the construction phase are anticipated. This will be documented in the Application.

PSD regulations also require analysis of air quality impacts on sensitive vegetation types with significant commercial or recreational value, or sensitive types of soil. Evaluation of impacts on sensitive vegetation will be performed by comparison of predicted Project impacts with screening levels presented in the EPA document "*A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils and*

Animals". These procedures specify that predicted concentrations used for the analysis account for Project impacts added to ambient background concentrations.

Most of the designated vegetation screening levels are equivalent to or exceed NAAQS and/or PSD increments, so that satisfaction of NAAQS and PSD increments assures compliance with most of the sensitive vegetation screening levels. For the SO_2 3-hour and annual averaging periods, sensitive vegetation screening levels are more stringent than comparable NAAQS standards. Additionally, there is a 1-hour screening level for SO_2 for which there is no NAAQS equivalent. A comparison of SO_2 sensitive vegetation levels with maximum predicted impacts from the Project will be performed.

7.5.2 Acid Deposition

An assessment of Project impacts on acid deposition will be performed according to the guidelines specified in a March 4, 1993, memorandum from Leon Sedefian to Impact Assessment Meteorology Staff and any other recent guidance. In general, the assessment approach is based upon previous model results performed by NYSDEC. The approach uses source-receptor matrices (emission rate – deposition rate) to scale the proposed source's potential impacts. Modeled sources that are spatially appropriate are first identified. The ratio of Project emissions to model source emissions will be multiplied by the depositions predicted for the modeled source at each receptor location to assess the impacts.

7.5.3 Global Warming

An assessment of the Project's emissions of CO_2 and other suspected greenhouse gases from the Project will be conducted. Brookhaven Energy anticipates that the assessment will include a summary of emission reduction goals of the Kyoto Protocols, an estimate of the Project's annual and life-cycle emissions of CO_2 and other significant greenhouse gases, on the basis of EPA-specified factors; and a comparison of the projected emissions with New York State, national and/or global emissions, and with emissions from existing generation units that would be dispatched if the Project were not generating.

7.6 Construction Related Activities

Project-related air quality impacts during construction are expected to include fugitive dust emissions from ground excavation, cut-and-fill operations, and removal of debris, as well as vehicle emissions. However, because the construction period is limited and activities change during the construction phases, these emissions are only temporary and vary throughout this period.

Fugitive dust emissions will depend on such factors as soil properties (i.e., moisture content, volume of spoils, and soil silt content), meteorological variables, and

construction practices employed. For airborne particulates, such as fugitive dust, the New York State Department of Transportation (NYSDOT) recommends the use of control measures to minimize these emissions. Consistent with NYSDOT's Environmental Procedures Manual, emissions of fugitive dust will be mitigated using the following measures:

- The use of water or other wetting agents on areas of exposed soils on a scheduled basis.
- The use of covered trucks for soils and other dry materials.
- Limited storage of spoils on the construction site.
- Final grading and landscaping of exposed areas as soon as possible.

NYSDOT reports that such measures have been effective in limiting fugitive dust during the construction period.

8.0 AESTHETICS AND VISUAL RESOURCES

8.1 Applicability and Scope

At the earliest meetings held with municipal officials, when the Project was first being contemplated, visibility was identified as a potential issue of concern. For that reason, Brookhaven Energy will take great care to coordinate Project aesthetics with the community.

Although New York State does not specifically regulate project aesthetics or quantify indirect impact to visual resources, the consideration of these issues is inherent to the environmental review process and will help to address the concerns of local officials and the public. Furthermore, the Public Service Law requires the Siting Board to issue a Certificate only if it finds that the Project "minimizes adverse environmental impacts, considering... the interest of the state with respect to aesthetics." PSL §168.2(c)(i). The Siting Board regulations explicitly require an analysis of visual resources. 16 NYCRR 1001.3(b)1(iii).

The following preliminary assessment of the existing visual resources within the Project area is provided to assist with the evaluation of potential Project impacts upon the existing visual character of the immediate vicinity and the broader region. The study is proposed to take two slightly different approaches – one for studying impacts within 3 miles and one for studying more distant impact. Brookhaven Energy is cognizant that 5-mile radii have sometimes been used for similar assessments in the Article X process, in order to capture the potential impact of background views. However, the topographic nature of the southern portion of Long Island is such that open views of terrain more than 3 miles away are not generally expected, with two types of possible rare exceptions – coastal areas providing potentially unobstructed views, and rare hilltop areas with overlooks that rise above vegetation. (Both types of areas are identified below.) Also, for more distant views, the Project's 180-foot stacks, if visible, would very likely be seen next to an existing water tower that is almost the same height, whereas at closer (foreground or midground) views, the water tower would not necessarily be seen, since it is about 4,000 feet away from the stack locations. A 5-mile radius may also be inappropriate in cases involving potential views across a portion of Bellport Bay from points *more* distant than 5 miles.

8.2 Character and Visual Quality of the Existing Landscape

The surrounding landscape is relatively flat, and gradually rises from the coastal zone to that is south of the Project site toward higher elevations that are north and especially northwest of the site. The nearest major topographic feature is the Brookhaven Landfill, some 2 miles south of the site. The landfill is capped with the exception of Cell 5, which is still accepting incinerator ash. The capped height of

the landfill (Cell 4) is 262 feet. The final permitted height of Cell 5 is 232 feet above mean sea level (msl).[6] Other than the landfill, the highest point within 3 miles is 199 feet msl (Gordon Heights), and the lowest point is at sea level. Beyond 3 miles, an area of note is the Suffolk County Vietnam Veterans Memorial, with its adjacent park and overlook, located in the median of County Route 83. The height of the overlook is approximately 331 feet msl.

Immediately to the north of the site is the Long Island Expressway (LIE) and west of the site is Sills Road. Motorists will see portions of the proposed facility as they drive by or use the interchange, albeit for a short period. Representative views from this area will be studied.

Immediately to the west of the site is Sills Road. As with any roadway, it provides a clearing in trees and other vegetation that may enable views of a portion of the power plant. The residential/industrial areas that are 2,000 feet west of the site (and further) are otherwise shielded from the site by vegetation. Representative views from this area will be studied.

Immediately to the south of the site is the LIRR and the Sills Industrial Park. Views of the plant for LIRR passengers are not proposed to be studied as trains pass at speed with no forward view for passengers. The industrial park is situated at approximately 90-100 feet msl, lower than the proposed Project, and is for the most part shielded by vegetation. Representative views from this area will be studied.

Immediately to the east of the site is a LIPA electric transmission corridor, which is used by maintenance workers. To the east of the corridor is extensive vegetation. Further to the east are several Suffolk County facilities, including the county farm and the old county infirmary (which has been moved to a new facility, as described below). On the south side of the LIRR, the nearest county facilities include the Police Headquarters, a minimum-security prison, and the Suffolk County Skilled Nursing Facility. Representative views from this area will be studied.

The Project site itself contains vegetation that generally is not higher than 30 feet. Therefore, when views are unimpeded by either terrain, structures, or vegetation near the receptor (and this will rarely be the case), the resulting view is expected to include both the stacks and the upper half of the Project's air-cooled condensers, generation buildings, or HRSGs, depending upon orientation. However, preliminary indications are that there will be few locations from which there would be an unobstructed view.

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6 Cell 4 height courtesy Mr. Edward Hubbard, NYSDEC Region One, Solid Waste Division. Cell 5 height as permitted by NYSDEC, Project No. 1-4722-00030-00004-0, Second Interim Decision of The Commissioner, August 30, 1996.

8.3 Information Requirements and Methodology

The core of Brookhaven Energy's evaluation of visual and aesthetic impacts will be representative "before and after" photographic overlays. These overlays approximate the views that will be present, if any, at a selected receptor location. Overlays are an objective way to assess the magnitude of impacts. A second type of analysis will consist of an on-site balloon demonstration, preceded by a press release, which will permit confirmation of the photographic overlays and provide a three-dimensional sense of the stack height and distance to the proposed facility from any viewing location. A third type of analysis will include focus groups during which members of the public will be presented with photographic overlays and renderings with various color schemes, and asked series of questions to record and qualify their reaction. The results of the focus group will be presented in the Application.

In order to conduct a balanced and complete visual assessment, it is important to select a sufficient number of appropriate viewpoints. The primary types of viewpoints that Brookhaven Energy has tried to select are:

- Locations with highly frequent exposure, such as residential areas or high volume roadways;
- Significant aesthetic resources, especially historic sites, high public use areas, parks, and overlooks; and
- Locations with unobstructed or direct line-of-sight views;

Brookhaven Energy has made initial contact with DPS Staff, NYSDEC, the Office of Parks Recreation and Historic Preservation (OPRHP), and Brookhaven officials in order to solicit input regarding the selection of viewpoints. Brookhaven Energy seeks this type of feedback not only from those agencies, but also from residents who believe that views from their property may be affected.

In order to provide a basis for further discussion, Brookhaven Energy has conducted a survey of aesthetic resources and a line-of-sight analysis. The two studies are presented here.

8.4 Aesthetic Resources Survey

Published lists and maps of specially designated federal, state and local scenic resource categories have been reviewed. Generally, this analysis was conducted to within a 5-mile radius of the site. Exceptions are noted below. The resource categories reviewed include:

- National Wildlife Refuges;

- Wild and scenic rivers noted on the US National Park Service web site (http://www.nps.gov/rivers) and in ECL §15-27;
- Scenic byways;
- Scenic Areas of Statewide Significance, as noted by the New York State Department of State-Division of Coastal Resources and Waterfront Revitalization;
- State parks noted in USGS mapping and the Hagstrom Suffolk County Road Atlas;
- Sites listed on the State and National Registers of Historic Places (within 3 miles);
- Locally designated public parks and recreation areas (within 3 miles);
- Local equestrian facilities, horse farms and golf courses (within 3 miles); and
- State-registered Big Trees (within 3 miles).

Figure 8-1, *Aesthetic Resource Areas and Distant Viewshed Locations*, shows the visually sensitive resources identified to date, irrespective of whether or not the Project could be visible from these locations. The features are shown in the figure by geographic location, but described below by type.

8.4.1 National Wildlife Refuge

Wetlands surrounding the mouth of the Carmans River, as it empties into Bellport Bay, have been preserved as the Wertheim National Wildlife Refuge (NWR). A portion of the Wertheim NWR, Little Neck, is located within 3 miles of the Project site, and most of the NWR is within 5 miles. Viewpoints are proposed from nearby locations both south and north of the NWR. One of these would feature a view of the NWR itself.

8.4.2 Wild and Scenic Rivers

Based on data review, there are no federal wild and scenic rivers on Long Island. However, there are two New York State-designated wild and scenic rivers: the Peconic River (which is outside a 5-mile radius) and the Carmans River. Land around the Carmans River has been preserved as part of Southaven County Park. This river is used for canoeing and recreation. It is not likely that the Project would be visible from this location, but a representative viewpoint is proposed.

8.4.3 Scenic Roads

According to NYSDOT Region 10, there are no designated scenic byways or scenic roads in the town of Brookhaven.


5 Mile Radius
3 Mile Radius
Project Site
Yaphank Commons
County Preserve
Fishing Access
Historic Places
Carmans River
County Farm
Cathedral Pines C.P.
Prosser C.P.
Golf
Park
EO
Overlook
Landing Strip
Radio Towers
Middle Island
Coram
Selden
BROOKHAVEN
Ronkonkoma
Holbrook
Patchogue
Medford
Yaphank
Farmingville
Holtsville
Hagerman
North Bellport
Fireplace Neck
Brookhaven National Wildlife Refuge
Southaven County Park
Bellport
Bellport Bay
Patchogue Bay
Blue Point
Bayport
Howells Pt.
Lake Ronkonkoma
Middle Island State Game Farm
Twin Ponds
Gordon Heights
Upton
Heliport
Landing Strip
Expressway
Long Island
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Date: 20 Mar 00 — z:\09 Monday Jun2\letting\visalites.map

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8.4.4 Scenic Areas of Statewide Significance

The data review indicates that there are no Scenic Areas of Statewide Significance on Long Island.

8.4.5 State Parks and Conservation Areas

Based on a review of the OPRHP web site (http://nysparks.state.ny.us) and the Hagstrom Suffolk County Road Atlas, there are no state parks within 5 miles of the Project site. The nearest state park is Brookhaven State Park, which is on the east side of the William Floyd Parkway, about 6 miles from the site.

8.4.6 Registers of Historic Places

A review of the National and State Register of Historic Places indicates that there are four listed properties within a 3-mile radius of the site. In order of proximity, they are:

- Suffolk County Almshouse Barn (about 1 mile east of the Project site);
- Robert Hawkins Homestead (near Lower Lake, 1.5 miles away);
- Homan-Gerard House and Mills (near Lower Lake, 1.5 miles away); and
- St. Andrew's Episcopal Church (Main Street in Yaphank, 1.5 miles away).

8.4.7 Parks and Recreation Areas

Local and county parks and recreation areas were identified through mapping resources and field reconnaissance. The nearest such place is a NYSDEC fishing access area on the south side of Lower Lake, a little more than 1 mile from the Project site. Representative viewpoints near both sides of the Lower Lake are proposed.

Southaven County Park is the preeminent natural open space in the area. It is a large expanse of land surrounding the Carmans River downstream of the Lower Lake. A representative viewpoint from the park is also proposed. There is also a county nature preserve on the left bank of the Carmans River between the Upper and Lower Lakes. Other county parks in the area are more distant: Cathedral Pines County Park and Prosser County Park.

A town green known as Yaphank Commons and a town park are located at the intersection of Mill Street and Main Street in Yaphank. A viewshed from Yaphank Commons is proposed.

Among the other landscaped parks or recreational facilities in the area are Twelve Pines Park (more than 2 miles southwest of the Project site), Eagle Estates Park

(approximately 2 miles west of the site), Granny Road Park (approximately 2 miles northwest of the site), and Model Airplane and Martha Avenue parks (approximately 3 miles south of the site). These parks primarily serve residential areas.

8.4.8 Equestrian and Golf Facilities

There are several horse farms and equestrian facilities within 3 miles, including a facility at Southaven County Park, Good Shepherd Farm, Country Farms and Touch'n'go Farms. (Note that the Suffolk Meadows Race Track, which appears on the most recent available mapping, is being redeveloped for commercial purposes). Golf facilities within 3 miles include the Mill Pond Gold Course and Middle Island Country Club.

8.4.9 Big Trees

NYSDEC and the New York State Forest Practice Board recognize trees of record size and promote an interest in their care and preservation. Trees are nominated and listed on the State Register of Big Trees. This register lists only native and naturalized species and does not include hybrid species. Based on NYSDEC information, there are no New York State Registered Big Trees within 3 miles of the Project site.

8.4.10 Sensitive Receptors

A review of the area within 3 miles of the Project site was conducted to determine the location of nearby sensitive receptors such as hospitals, churches, and schools. Because this was a more intensive search that does not rely solely on secondary data, and in light of very limited views outside 3 miles (as discussed above), a 3-mile radius is considered appropriate for this portion of the study. This review was conducted using the USGS Bellport Quadrangle, aerial photographs taken in 1994, a bird's-eye view taken in February 2000, and field reconnaissance. The Suffolk County Skilled Nursing Facility was noted. Schools included the Walters Elementary School, Brookhaven Country Day, New Interdisciplinary School, Patchogue-Medford School, Eagle Drive Elementary School, Hampton Avenue School, and South Haven Elementary School. Houses of worship in the area include the Calvary Gospel Church, Yaphank Presbyterian Church, Bible Baptist Church, St. Andrew's Episcopalian Church, and Calvary Baptist Church. There are also several cemeteries in the area. Viewpoints are proposed near some of these locations, but from points where visibility potential exists.

8.5 Digital Elevation Modeling and Viewpoint Selection

A digital elevation model (DEM) has been used to identify areas from which the stack or other elements of the facility might be visible on the basis of lines-of-sight. To account for vegetation, the approximate extent of forested areas has been

digitized from a 1994 USGS aerial photograph, complemented by field reconnaissance for locations cleared since that time (for example, the New Interdisciplinary School southwest of the site). A height of 30 feet was conservatively assumed for all forested areas. The DEM combines terrain and vegetation data to create a model that suggests areas for further investigation of viewsheds. For reasons outlined above, the DEM was used for points within 3 miles.

Within 3 miles of the site, the selection of viewpoints has been a result of overlaying the aesthetic resources identified above and the results of the DEM. Viewpoints have also been chosen from within areas that the DEM suggests should be studied further and that also carry potential for high frequency exposure – portions of the LIE and several residential areas. Viewpoints have also been selected in aesthetic resource areas where the stacks are *not* predicted to be seen (e.g., the Southaven County Park), in order to verify the computer-generated analysis and to present a balanced assessment of overall visual impact potential. Beyond 3 miles, the selection of viewpoints has been a result of analyzing the aesthetic resources identified above and prominent terrain features (overlooks, coastal areas, large open spaces).

Leaf-off viewshed photographs have been taken for all the viewpoints proposed in this Preliminary Scoping Statement. Where it was evident that vegetation blocks far-field views, points with the greatest potential visibility were chosen (an adjustment made directly in the field). Several of the proposed viewpoints are along the Long Island Expressway, representing possible views for motorists. The results of the preliminary DEM for the Project and the locations of representative viewpoints within 3 miles are shown in Figure 8-2. Points selected beyond 3 miles are shown in Figure 8-1 (for reasons of scale). All locations are described in Table 8-1. Locations 1 through 25 are views toward the facility from within 3 miles. Location 26 through 29, also within 3 miles, are indicative of highway or local arterial views. Locations 30-35 are from beyond 3 miles. Locations designated by the prefix H are views of sites on the National Register directed toward the proposed Project (to see if it is visible in the background).

One of the important goals of the Public Involvement Program and agency meetings has been and will be to identify locations from which the public or the interested parties would like viewshed photographs to be taken. Brookhaven Energy would like to stress input on this issue because of the importance of taking background photographs for computer rendering during leaf-off conditions, when visibility would be at its greatest. Upon request, Brookhaven Energy will take viewshed photographs from any local residence with a reasonable chance of seeing the facility. Brookhaven Energy asks the public and local and state agencies for any further input.

8.6 Initial Impact Assessment and Mitigation

8.6.1 Creating Photographic Overlays

Table 8-1 lists the proposed viewpoints.

Table 8-1: Proposed Viewpoints

No.	Description of Viewpoint	Shown on
1	From Southaven County Park	Figure 8-2 (within 3 miles of the site)
2	From Victory Avenue	
3	From Suffolk County Skilled Nursing Facility	
4	From the Suffolk County Farm Entrance Way	
5	From Long Island Avenue West of Yaphank Avenue	
6	From Long Island Avenue at Gerard Road	
7	From Yaphank Avenue Near Main Street	
8	From Main Street in Yaphank	
9	From Valerie Court North of Raimond Street	
10	From Charles East Walter Elementary School	
11	From Yaphank Commons	
12	From Siegfield Park Green	
13	From Sills Road, View South Toward LIE	
14	From the LIE at Exit 66, Overlooking Sills Road	
15	Near German Boulevard	
16	From Mill Road Near Mill Pond Golf Course	
17	From Race Avenue West of Falcon Avenue	
18	From Long Island Avenue at Bellport Road	
19	From Lincoln Road South of LIE	
20	From LI Avenue west of old Patchogue-Yaphank Road	
21	From Route 101 Near Sills Industrial Park	
22	From Route 101 at New Interdisciplinary School	
23	From Sills Industrial Park	
24	From Tarpon Avenue at North Way	
25	From Tarpon Avenue at Rustic Avenue	
26	LIE Eastbound, East of Route 112	
27	LIE Westbound, West of William Floyd Parkway	
28	LIE Westbound, West of Moriches-Middle Island Road	
29	Moriches-Middle Island Road, near LIRR	
30	From Suffolk County Vietnam Veterans Memorial	Figure 8-1 (more than 3 miles from site)
31	From Saxton Street Middle School Track, N. Patchogue	
32	From Smith-Rourke House, East Patchogue	
33	From Fireplace Neck Conservation Area	
34	From Parkview Drive, Mastic Beach (across water)	
35	From West End Avenue, Shirley	
H1	View of Suffolk County Almshouse Barn	Figure 9-1
H2	View of Robert Hawkins Homestead	
H3	View of Homan-Gerard Site	

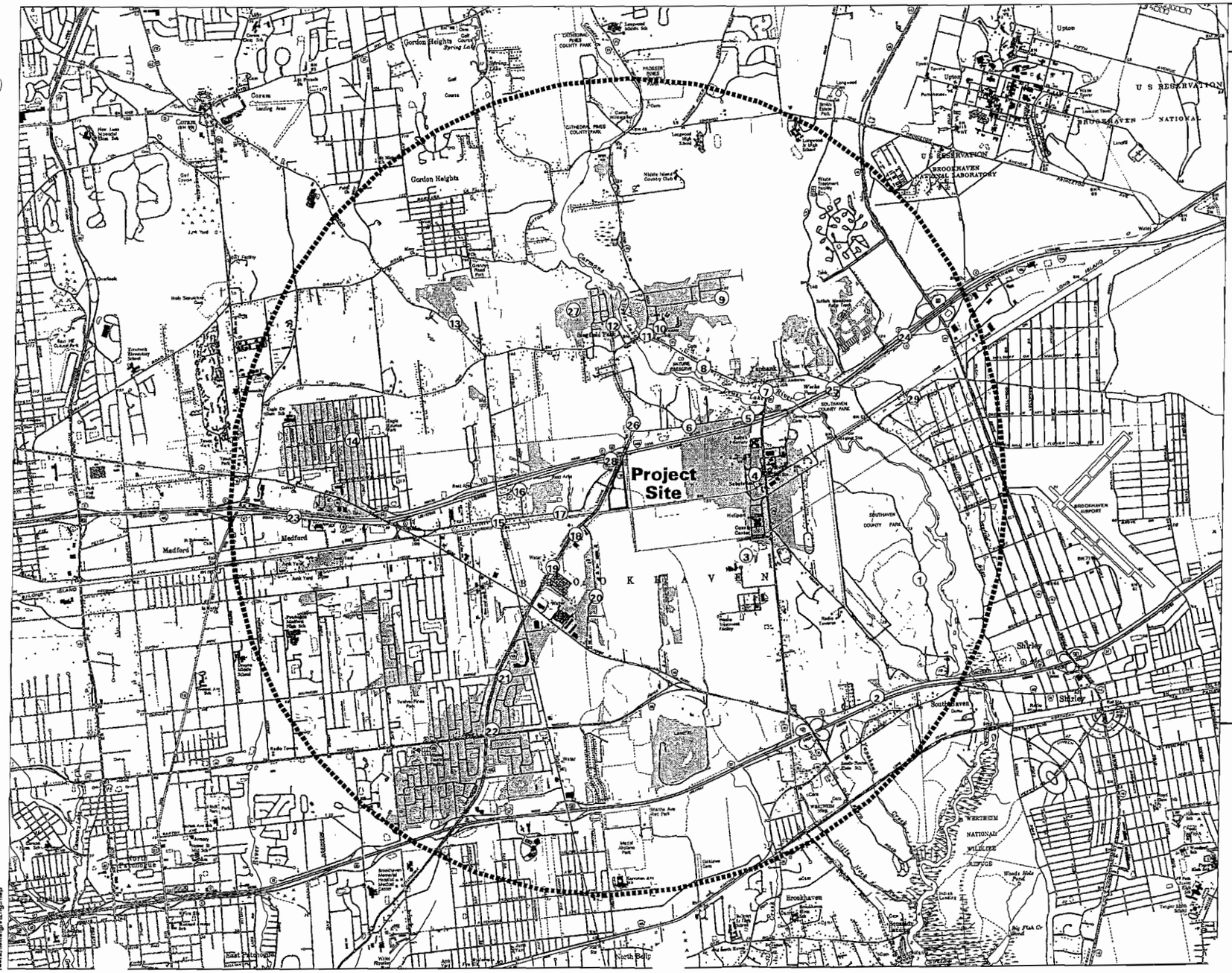

Figure 8 - 2
3 - Mile Digital Elevation Modeling and Viewshed Locations

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Computerized perspective views of the facility and stacks have been or will be generated for each of these proposed viewpoints by creating a three-dimensional digitized model of the facility, positioning the viewer at the appropriate receptor point, and specifying a field of view equal to that of a 50 mm lens used to take the actual photographs. These perspective views are then superimposed on the photographs to present a visual depiction of the view. Photographs of the existing views from selected locations are compared to those with the facility in place.

8.6.2 Visual Characteristics of the Project

The most prominent structures associated with the Project are the exhaust stacks, air-cooled condensers, generation buildings, and HRSGs. The tallest structures will be the facility exhaust stacks. Stack height is determined based on air quality and expected to be 180 feet. Each stack will be approximately 18 feet in diameter. The tallest structures on the site other than the exhaust stack will be the air-cooled condensers at approximately 90 feet, and the generation buildings at 72 feet. Ancillary facilities, such as miscellaneous storage tanks, will be smaller and less prominent than the main structures. The Project will be surfaced with smooth painted metal panels, typical of modern industrial buildings. Buildings and stacks will be painted a neutral color to mitigate visibility. Aesthetic landscape design and architectural treatments will be incorporated to minimize visibility.

Because the Project is proposed with air-cooled condensers, there will be no cooling tower plumes. On rare occasions – under cold and humid conditions -- plumes from the exhaust stacks may be visible. Brookhaven Energy anticipates adding wintertime overlays showing a condensed water vapor plume representative of wintertime conditions (e.g., average January daytime temperature and humidity), if and as it may appear from one or two selected viewpoints (e.g., a location representative of the Suffolk County Farm and a location representative of the Yaphank historic district).

8.6.3 Views of the Project

It is anticipated that existing topography and surrounding vegetation will limit most prominent views of the Project. However, there will be a view of the stacks from Sills Road and the LIE. The Project will also be seen from Yaphank Avenue at and around the Suffolk County Farm. The Project does not appear to be visible from the Yaphank historic district or from the residential areas south and west of the site. It would be visible in the distance from the overlook at the Suffolk County Vietnam Veterans Memorial.

8.6.4 Anticipated Mitigation

One type of mitigation measure that Brookhaven Energy will attempt will be to lower the stacks from 180 feet. Minimum stack height will be determined by modeling that is required pursuant to the Clean Air Act. Air modeling may demonstrate that it is possible to lower the stack height to below 180 feet while still maintaining sufficient dispersion so that air quality impacts are insignificant.

As part of another type of mitigation, Brookhaven Energy will work with the public regarding adjustments to project design, orientation or screening. To the degree it is practical, buffering will be considered (for example, through the use of additional or different types of landscaping, and/or fencing). The Project will require appropriate lighting, to be designed and incorporated with sensitivity to surrounding land uses. A lighting plan will be developed to achieve appropriate nighttime lighting levels to ensure the safe and secure monitoring of the grounds. In addition, the Federal Aviation Administration (FAA) will review the height of the stack relative to regional airports and heliports, and may require the addition of navigational lighting. A Notice of Proposed Construction or Alteration will be filed with FAA for the stack location once it is determined. The nearest facility is a heliport at the Suffolk County Police Headquarters (approximately 1 mile from the site).

Transmission lines can be a source of new visual impacts, but there will be no new transmission corridors in the case of the Project. With respect to transmission upgrades, Brookhaven Energy anticipates that there will be no physical removal or replacement of transmission structures. Therefore, no additional impacts will result.

9.0 CULTURAL RESOURCES

9.1 Applicability

Cultural resources refer to both historic and archaeologically sensitive places. Many types of projects are required to document certain types of cultural resources that they may affect. The Public Service Law requires the Siting Board to issue a Certificate only if it finds that the Project "minimizes adverse environmental impacts, considering... the interest of the state with respect to... preservation of historic sites." PSL §168.2(c)(i). Furthermore, the Siting Board regulations explicitly require applicants to list local cultural resources, specifically the "identified historic, community and archaeological resources listed, or eligible to be listed, in the National or State Registers of Historic Places." 16 NYCRR 1001.3(b)1(iv).

9.2 Existing Setting

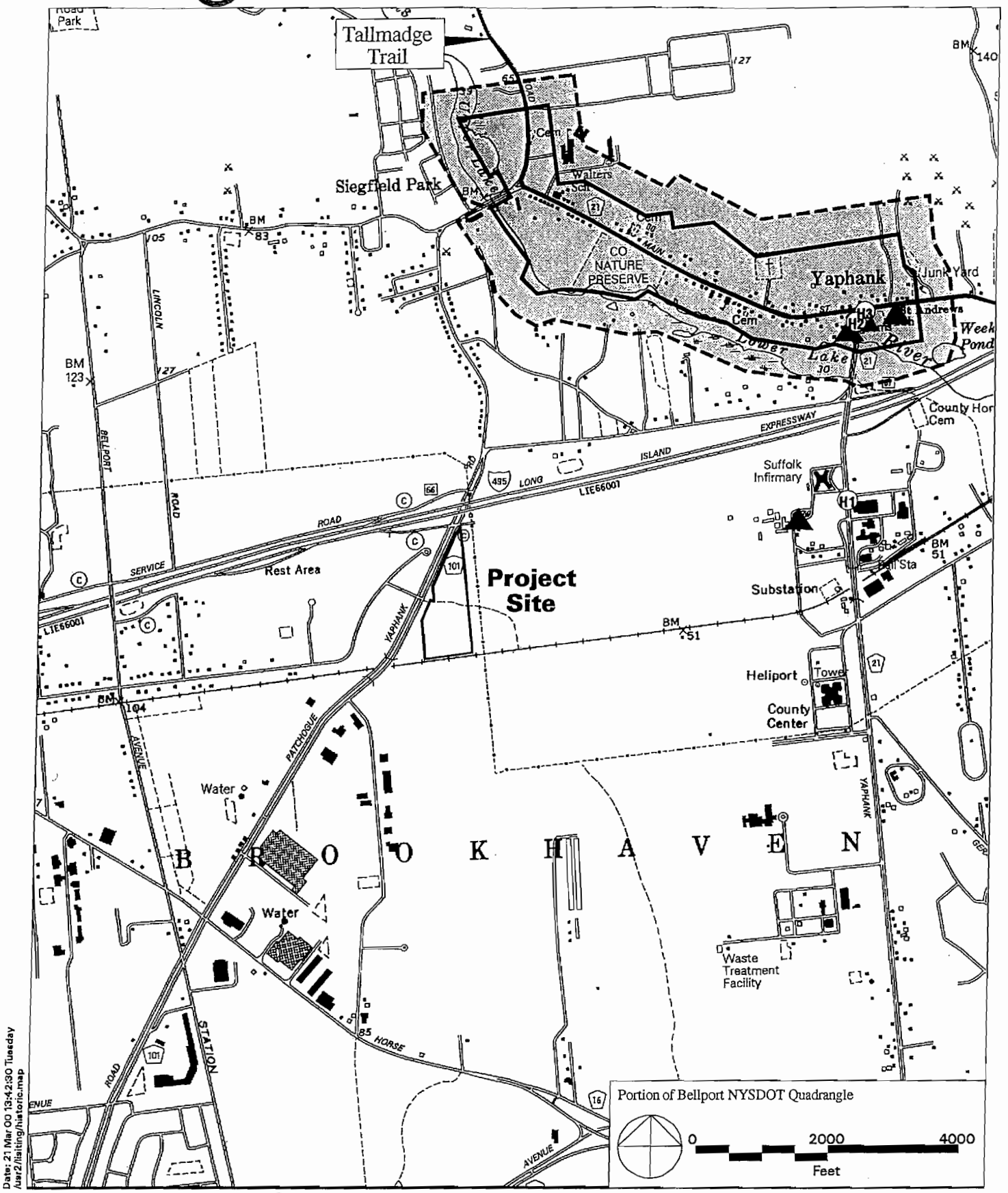
The Project site is located in an upland area with relatively immature tree growth. In light of its flat terrain, the agricultural history of eastern Long Island, and relatively recent reforestation, the land is likely to have been subject to past agricultural use. Because it is not proximate to streams, it would not likely be considered an area of high sensitivity for archaeological resources. However, this determination will be made in accordance with a study that will be undertaken as part of the Application.

Consultation with OPRHP regarding potential resources has been initiated. In addition, an evaluation of historic and cultural resource databases for the site region has been conducted, and it indicates that there are a number of registered national and state historic landmarks in the general vicinity of the Project. Applying a 2-mile study area, typical for Article X projects, there are four sites listed on the National and State Registers of Historic Places. These resources are discussed in the sections that follow.

With respect to the off-site facilities to be studied (see Section 2.1), it is likely that the corridors to be used are all existing corridors. Construction that has previously occurred in these types of corridors generally has caused disturbance to the relevant layers for recovering cultural artifacts, the upper soil horizons.

9.2.1 National Register of Historic Places

The four sites currently listed on the National Register of Historic Places within 2 miles of the site are briefly described below. A location map is included in Figure 9-1, *Local Historic Resources*.



Date: 21 Mar 00 13:42:30 Tuesday
/usr2/liaiting/historic.map

Figure 9 - 1
Local Historic Resources

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The *Suffolk County Almshouse Barn* is the closest landmark to the Project site. It is situated approximately 0.5 miles to the east of the site. The barn continues to serve the Suffolk County Farm.

The *Robert Hawkins Homestead*, also known as the Hawkins-Jacobsen House, is located on the west side Yaphank Avenue in Yaphank village, north of the LIE, Long Island Avenue, and the Lower Lake. The house is approximately 1.4 miles from the Project site.

The *Homan-Gerard House and Mills* are located on the east side of Yaphank Avenue at Main Street, across the street from the Hawkins Homestead. Settlement occurred in 1726, and the mill was powered by impounding the flow of the Carmans River.

St. Andrew's Episcopal Church is located on Main Street toward the east end of Yaphank village. This is also one of several active congregations in the area.

9.2.2 State Register of Historic Places

A review of the State Register of Historic Places indicates that there are no structures listed by the state within 2 miles of the Project that are not also listed on the National Register of Historic Places. The two programs overlap to a large degree; nomination to the State Register most often leads to listing on the National Register.

9.2.3 Locally-Designated Resources

In addition to state and federally designated historic resources, there are cultural resources of local significance. Additional historic resources that may be identified within 2 miles of the Project site will be described in the Application

The village area of Yaphank is a recognized "historic area" under the Brookhaven Zoning Ordinance (§85-184 to §85-191). The historic area is located on both sides of Main Street in Yaphank. It stretches from a point near St. Andrew's Episcopal Church (east of Yaphank Avenue) to a point approximately 1,500 feet north of Yaphank Commons. See Figure 9-1. The Zoning Ordinance also specifies a 500-foot buffer, or "transition zone," surrounding historic areas in Brookhaven. Both the historic district and the transition zone are on the north side of the LIE.

The Benjamin Tallmadge Trail is also shown in Figure 9-1. It stretches a distance of 21 miles from Mt. Sinai on Long Island's north shore to the Manor of St. George on the south shore (all within the town of Brookhaven). It commemorates the feat of Brookhaven native Benjamin Tallmadge, George Washington's chief of intelligence, whose war party marched along this route in November 1780. Designated places of interest along the trail are principally at old mill sites and homesteads. Relative to the Project site, the nearest designated places of interest are in the vicinity of the

impoundments of the Lower Lake and Upper Lake: the sites of Homan's and Swezey's mills, the Hawkins house, and the Captain William Phillips House.

9.3 Cultural Resource Assessment Methodology

A Phase IA survey will be conducted at the site to determine whether there is a likelihood that there are any historic or archaeological resources that might be impacted by construction or operation of the proposed Project. The Phase IA survey will include a site reconnaissance, a background information search, and an evaluation of the site's potential to be the location of previously unrecorded cultural resources. This survey will include reviews of historic documents such as maps. It will also make use of electronic files held by OPRHP.

The on-site survey will be conducted in consultation with OPRHP, whose commissioner acts as the State Historic Preservation Officer (SHPO) under the National Historic Preservation Act. In addition, the Brookhaven Historic District Advisory Committee and Town Historian will be consulted. If needed, as determined in consultation with OPRHP, a Phase IB survey will also be conducted. A Phase 1B survey could include site visits and evaluations through excavation of test pits conducted by archaeological experts. It is expected that the same procedures will be followed for the water and sewer interconnects, to the extent necessary.

9.4 Initial Impact Assessment and Mitigation

Because there appears to be little potential for cultural resources to be present on the Project site, no mitigation efforts are currently anticipated. With respect to off-site cultural resources located away from the site, impacts would be limited to potential views of the proposed Project. The preliminary aesthetics evaluation, which has been presented in Section 8, specifically addresses the potential for visual impacts and the methodologies proposed to evaluate them. It appears that the documented historic and cultural resources within 2 miles of the site would not have views of the proposed Project and are unlikely to be impacted by the proposed Project. While there are some unobstructed views of the Project from some points at the Suffolk County Farm, the Project is not expected to appear in the background for any views of the historic Suffolk County Almshouse Barn.

If needed for the off-site facilities to be studied (see Section 2.1), an Unanticipated Discovery Plan will be included in the Application. In the unexpected event that resources of historic or archaeological importance are encountered in the excavation process, appropriate studies will be conducted commensurate with the importance of the discovery. The plan would outline procedures for Brookhaven Energy to appropriately address any archaeological resources encountered during construction. Appropriate mitigation measures, when and if needed, will be taken commensurate with the results and recommendations of any subsequent studies.

10.0 GEOLOGY, SEISMOLOGY, AND SOILS

10.1 Applicability

This section addresses constructibility issues – soils, bedrock location, topography and slopes, groundwater depth, and other geotechnical conditions, as documented in existing literature. On-site geotechnical investigations will be conducted on the basis of the final layout. The Siting Board regulations also explicitly require an evaluation of geology and seismology. 16 NYCRR 1001.3(b)1(v). Furthermore, the Public Service Law requires that an Application contain, "as appropriate, geological... tsunami, [and] seismic" data. PSL §164.1(a). The potential for active seismological faults and earthquakes that could cause ground motion, liquefaction, slope instability and deformation will therefore be addressed in the Application.

10.2 Soils Analysis

10.2.1 Existing Conditions

County-wide mapping of the soils has been completed by the United States Department of Agriculture's (USDA) Natural Resource Conservation Service (NRCS), formerly the Soil Conservation Service. The USDA Survey[7] has been used to identify the soils present at the Project site, as shown on Table 10-1. Along with the soil types that make up the Project site are selected characteristics associated with each soil type. Most of the site (and all of the proposed footprint area) is composed of Haven loam and Riverhead sandy loam.

Based on information provided in the Suffolk County Soil Survey, depth to bedrock is more than 400 feet below the surface throughout Suffolk County. Bedrock is not likely to be encountered in any of the on-site excavations. Grading and stability of slopes, other than those in temporary construction cuts and fills, should not be a concern since the Project will be constructed in the middle and southern portions of the site.

10.2.2 Further Information Requirements and Methodology

A geotechnical site investigation will be conducted to characterize subsurface conditions in the immediate vicinity of the site for foundation design and construction, and will be reported upon in the Application. The geotechnical site investigation will consist of drilling, soil sampling, field observations, laboratory tests, and analyses that address foundation type, bearing capacity, settlement amount and rate, vibrations, liquefaction potential, seismic effects, and subgrade

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7 United States Department of Agriculture (USDA). 1975. *Soil Survey of Suffolk County, New York.*

improvement. This will ensure that the facility is safely and adequately designed and constructed, given site-specific conditions.

Table 10-1: Soil Characteristics*

					Suitability for Building Site Development[4]		
Soil Unit	% Slope	Water Table/Kind[1] (feet below surface)	Hydrological Group[2]	Permeability[3] (in/hr)	Pipeline Locations	Streets	Foundations for Low Buildings
CpE – Carver and Plymouth sands	15-35	>4/apparent	A	>6.3	Severe: stability	Severe: Slope	Low compressibility Large settlement possible under vibratory load
HaA – Haven loam	0-2	>4/apparent	B	0.63 - >6.3	Moderate: Stability	Slight	Low compressibility
PlA – Plymouth loamy sand	0-3	>4/apparent	A	>6.3	Moderate: Stability	Slight	Low compressibility
RdA – Riverhead sandy loam	0-3	>4/apparent	B	2.0 - >6.3	Moderate: Stability	Slight	Low compressibility
RdB – Riverhead sandy loam	3-8	>4/apparent	B	2.0 - >6.3	Moderate: Stability	Moderate: Slopes	Low compressibility

[1] Water table is highest level of a saturated zone more than 6 inches thick for a continuous period of more than 2 weeks during most years.

Apparent Water Table: A thick zone of free water in the soil. An apparent water table is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil.

Perched Water Table: A water table standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

[2] Refers to soils grouped according to their runoff-producing characteristics. Group A soils have a high infiltration rate (i.e., 0.3-0.45 in/hr), when thoroughly wet, and a slow runoff potential. Group D soils, at the other extreme, has a very slow infiltration rate (i.e., 0.00-0.05 in/hr), and a high runoff potential. Primarily, soils on the site are Group B, with some Group A soils toward the northern tip. These soils generally have a high infiltration rate, and are well drained.

[3] Permeability is the quality that enables a soil to transmit water or air. Terms used to describe permeability of the soils for this site include:

Moderate	(0.63 to 2.0 in/hr);
Moderately rapid	(2.0 to 6.3 in/hr); and
Rapid	(>6.3 in/hr).

[4] The degree of soil limitation that affect shallow excavations, dwellings, and roads for the soils on site are as follows:

Slight: Soil has few or no limitations for a particular use or that any limitations that are present can be overcome at little cost.

Moderate: Soil properties on site and site features are unfavorable for the specified use, but the limitations can be overcome or minimized by special planning and design.

Severe: Soil properties on site and site features are unfavorable or difficult for use. The costs to overcome the limitations are excessive.

*Information, in part, taken from Soil Survey of Suffolk County, New York, USDA Soil Conservation Service, April 1975, and web site www.statlab.iastate.edu/soils/osd.

10.3 Water Table Analysis

Water table depth will vary seasonally, as the Long Island aquifer system is dependent on precipitation. The geotechnical assessment will seek to establish the local groundwater flow regime. Based on the heavily studied regional Long Island groundwater flows, the southern or southeastern portions of the site are probably downgradient from the central and northern portions. Given the soil's naturally high infiltration capacity, precautions will be taken during design and construction to ensure that groundwater quantity and quality are adequately protected. For a more detailed discussion of aquifer issues and groundwater protection, see Section 16, Water Resources.

10.4 Blasting Analysis

Based on information provided in the Suffolk County Soil Survey, bedrock varies in depth under Suffolk County from 400-2,200 feet below sea level. It is anticipated that bedrock will not be encountered in on-site excavations. It is, therefore, anticipated that blasting will not be required at the site. While not anticipated, variably cemented sands and gravels and bedrock depth variations can occur beneath the glacial outwash terrace. During the geotechnical study, borings will be drilled at the site to confirm that the depth to bedrock will not be a concern. At least one boring will be drilled to the deepest proposed excavation.

10.5 Seismological Analysis

10.5.1 Existing Conditions

The site is located in the Atlantic Coastal Plain physiographic province and is underlain by Quaternary glacial and proglacial deposits. This recent deposit overlays Manmouth-Magothy sand and mud, Raritan sand and mud; Jurassic deposits of Ladentown basalts, Passaic conglomerate, arkose; Triassic Palisades diabase, Passaic mudstone, and siltstone. According to the Suffolk County Soil Survey, the bedrock under Suffolk County varies in depth from 400-2,200 feet below sea level. Glacial deposits, laid down at the end of the Pleistocene Epoch, overlay the bedrock in this area. The varieties of overburden formed by the advances and retreats of the various glaciers, that overlayed this area, ultimately determined the type of soils, stratigraphy, and most of the topographic features currently found throughout the region.

The predominant glacial deposit, in which the soils on-site formed, is glacial outwash, which consists of sorted sands and gravels. On the Project site, the Carver and Plymouth soils (near the northern tip of the site) formed from deep stratified sandy material containing little or no silt. Haven soils formed from silty deposits over the stratified sand and gravel. The Riverhead soils formed from a mantle of

sandy loam or fine sandy loam which overlayed the thick layers of coarse sand and gravel.

Topographically, the Project site is nearly level as slopes are typically 0-3 percent. Only at the far northern tip of the Project site do slopes occur in the 15-35 percent range.

According to New York State's Seismic Zoning Map for New York State (http://nceer.eng.buffalo.edu/faqs/nysszmap.html), the site area is situated in Seismic Zone C (with a siezmic zone fact of 0.15g). The state is subdivided into four Zones, A through D, with Zone A having the lowest effective peak horizontal accelerations (i.e., lowest earthquake damage potential), and Zone D the greatest. Most of New York State, including all of Long Island, is within Zone C.

10.5.2 Information Requirements and Methodology

An historic earthquake data search will be obtained from the New York State Geological Survey documenting that no significant or felt earthquakes have been historically noted on Long Island. Then, based on probabilistic maps[8], maximum values of ground acceleration and velocity can be statistically predicted at the site. It is expected that the analysis will show the likelihood of an earthquake at the Project site to be minimal, and thus the risk of soil liquefaction to be low.

The site will also be characterized on the basis of a land constraints map focusing on areas of relative incidence and susceptibility to landslides[9]. The susceptibility of an area to landslides would be a response to natural or artificial cutting or loading of slopes or a response to abnormally high precipitation.

Ground failure or subsidence due to karst terrain or underground mining, slumping due to slope instability, or landslides has the potential to do damage. Degree of slope, soil conditions, and soil moisture are the major factors affecting slope stability. Karst landscapes are broad and regional in nature. Landscape features of karst include caves, fissure, tubes, underground streams, sink holes, blind valleys, and springs. There are no known karstic features present at the Project site[10]. Therefore, no ground subsidence from these conditions is anticipated.

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8 Algermissen, S.T. et al. 1990. *Probablistic Earthquake Acceleration and Velocity Maps of the United States and Puerto Rico.* Miscellaneous Field Studies, Map MF-2120. USGS.

9 Radbruch-Hall, D.H. et al. 1982. *Landslide Overview Map of the Conterminous United States.* USGS Professional Paper 1183.

10 Davies, W.E. et al. 1976. *Map Showing Engineering Aspects of Karst in the United States.* US Geological Survey, Open File Map 76-623.

A tsunami is a series of waves generated by an undersea disturbance such as an earthquake. It is not anticipated that tsunamis will be an issue for the location of the power facility at the Project site given the minimal history of tsunamis occurring in the Atlantic Ocean region. A reference on recent tsunamis will be included.

10.6 Initial Impact Assessment and Mitigation

Potential impacts to geologic resources and potential impacts due to seismic conditions are at present expected to be minimal. Soils at the site are generally unsaturated to below 4 feet. Bedrock is deep; and therefore blasting to remove bedrock is not anticipated. The site is fairly level, and therefore slope stability is not a concern. Risk due to regional seismicity, vibrations, potential liquefaction of soils, and soil erosion and sedimentation is expected to be minimal. Appropriate seismic design parameters and current applicable seismic codes and design procedures for the construction of a power generating facility will be utilized.

11.0 LAND USE AND ZONING

11.1 Applicability

This section addresses several types of issues: compatibility with local laws, existing land uses, zoning, and land use planning. Land use analysis studies the patterns of local human settlement and life. In addition to the study of present patterns, this analysis examines the stated objectives of the community or its constituent groups, whether through master planning efforts, zoning and other land use regulations, or informally. The Siting Board regulations explicitly require an analysis of land uses and zoning districts. 16 NYCRR 1001.3(b)1(i). Decommissioning and restoration of the Project site are also addressed in this section, as this is an issue pertaining to the site's future land use.

The analysis of local laws is included in this section because most local laws are generally related to land use. However, in Suffolk County, there are other types of local laws, including a notable body or regulations related to groundwater protection. To the degree that these requirements affect the site plan, they are discussed in this section. To the degree they concern issues of groundwater protection, they are discussed in Section 16. The Public Service Law requires the Siting Board to issue a Certificate only if it finds that the Project "is designed to operate in compliance with applicable state and local laws and regulations." PSL §168.2(d). However, it should be noted that in the case of local requirements the Siting Board has discretion to grant relief from such provisions if it finds that they are "unreasonably restrictive in view of the existing technology."

Brookhaven Energy anticipates that county and municipal agencies will review the analyses of local laws in this Preliminary Scoping Statement and will discuss with Brookhaven Energy any revisions to the analysis that they believe are needed. Brookhaven Energy has conducted the current analysis specifically for purposes of initiating discussion, so that the analysis of applicable local laws presented in the Application will represent a consensus between Brookhaven Energy and the jurisdictional local authorities. Zoning and land use matters related to off-site facilities to be studied (defined in Section 2.1 and expected to be the water and sewer lines) will be discussed in the Article X Application.

11.2 Existing Land Use Profile

11.2.1 The Site and One-Mile Radius

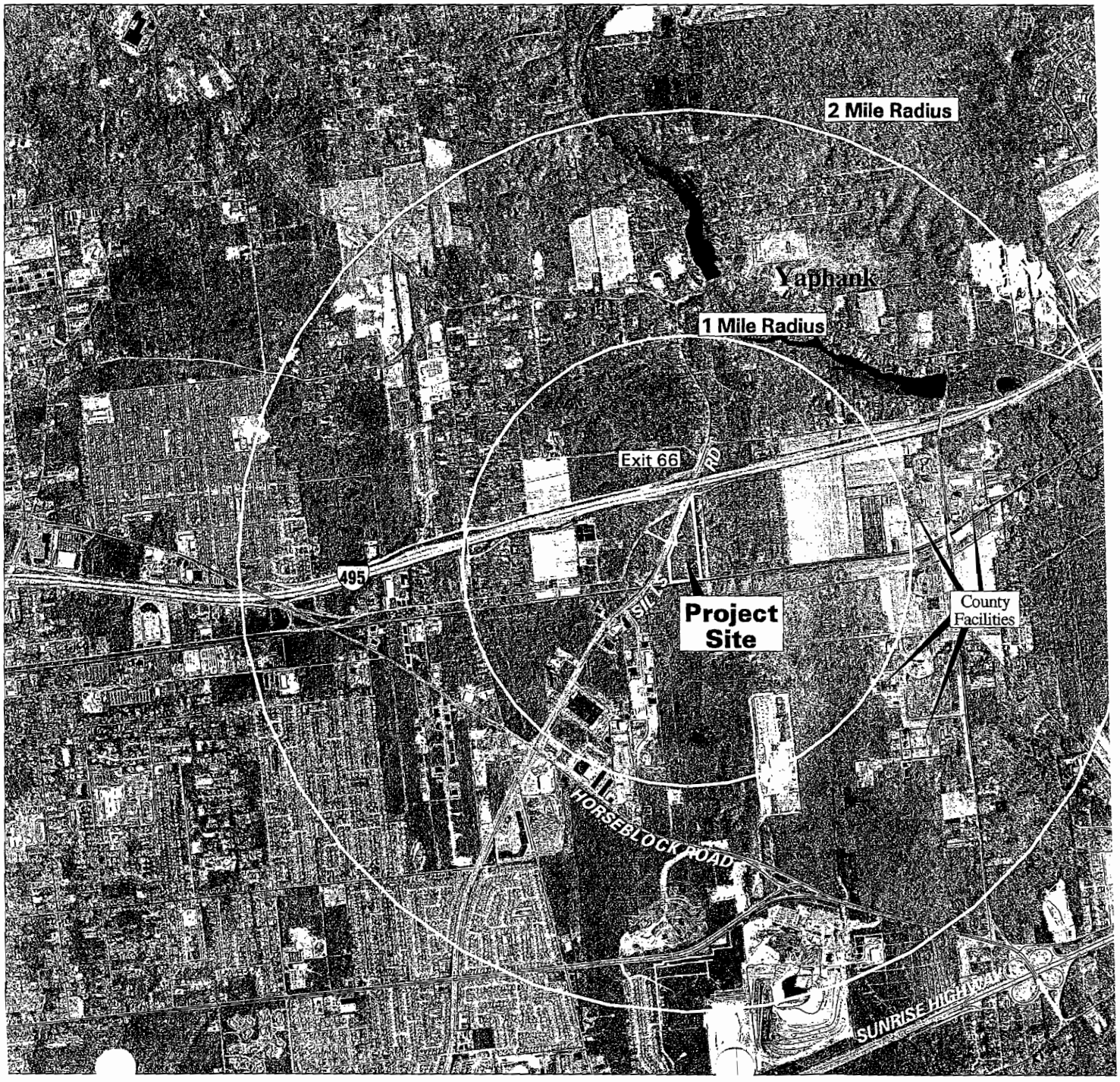
The proposed Project site is located near the geographic center of the town of Brookhaven, at Exit 66 of the LIE. The pattern of land use in the area, analyzed at a 2-mile radius around the Project site, is described below and presented in Figure 11-1, *Aerial Photograph* and Figure 11-2, *Land Use Map*.

There are no residences within about 2,000 feet of the Project location. The nearest land uses are all linear corridors – the LIE to the north, Sills Road to the west, LIRR to the south, and LIPA transmission lines to the east. The use of the site is vacant forested land. The forest shows signs of logging approximately 20-30 years ago (for more information about on-site vegetation, see Section 15).

South of the site (that is, on the east side of Sills Road and north side of Horseblock Road) are the Sills Industrial Park and other industrial parcels. The industrial park is home to a variety of businesses that include a petroleum distributor, a greeting card company, newspaper distribution, and other businesses such as offices or warehouses. Toward the south of the industrial park is a Waste Management, Inc. facility. Field reconnaissance revealed that three residences are located at or just north of Horseblock Road, in this otherwise industrial area. The nearest of these is approximately 1 mile from the site. In addition to industries within the Sills Industrial Park, there are industrial and office properties along both Horseblock Road and Sills Road. A gasoline station is located on Horseblock Road. Land to the east of the industrial park and directly south of the site is unoccupied and forested.

East and southeast of the site there is additional forested vacant land, bisected by the LIPA transmission corridor. The Grucci fireworks manufacturing and storage facility is located approximately ½ mile southeast of the site, with a driveway extending south to Horseblock Road, approximately 1½ miles from the site. The land use east of the site is dominated by a complex of Suffolk County facilities, which are located on both sides of Yaphank Avenue. The facilities within 1 mile are a corrections facility (southeast of the site) and the Suffolk County Farm (east of the site). The Suffolk County Farm and Education Center is operated by the Cornell Cooperative Extension. (Other county facilities are more distant than 1 mile and are therefore described in the next section.)

Northeast and north of the site (east side of Sills Road) is the LIE and, to its north, Long Island Avenue. Long Island Avenue in effect serves as a feeder or service road for the LIE, but it is also a local road with existing residences, forested land, the Brookhaven Country Day camp and school, as well as agricultural land (fields separated from the county farm by the LIE). There is low-density residential development along Gerard Road. There are three residences toward the western end of Long Island Avenue. The westernmost of these is one of the two closest residences to the Project site boundary, about 2,000 feet from the anticipated Project building locations. However, all of these residences are separated from the site by the LIE. A farm stand is located at the northeast corner of the Sills Road/Long Island Avenue intersection.


2 Mile Radius
Yaphank
1 Mile Radius
Exit 66
495
Project Site
County Facilities
HORSEBLOCK ROAD
SUNRISE HIGHWAY

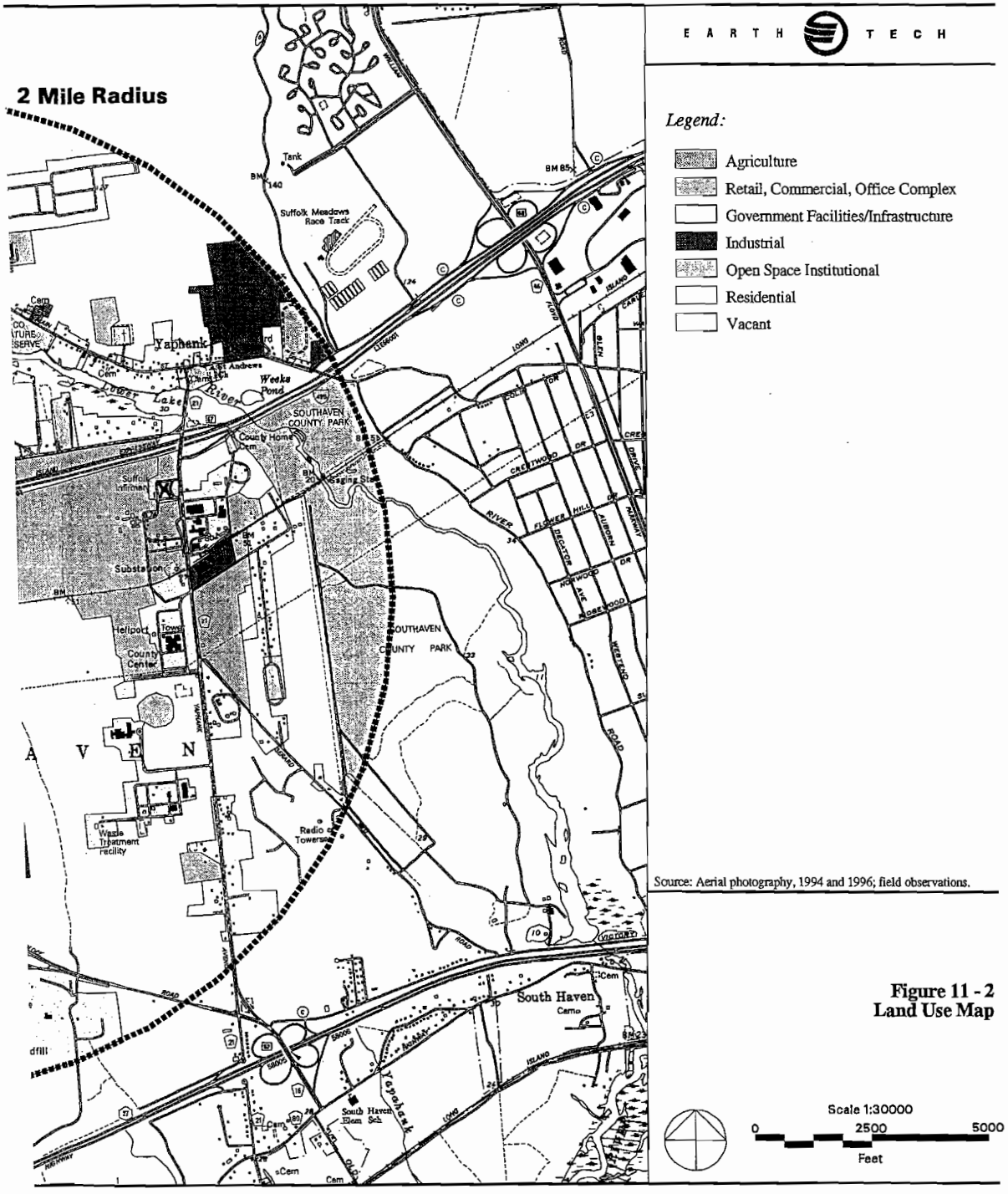


Figure 11 - 2
Land Use Map

Beyond the land uses that front onto Long Island Avenue and Gerard Road is the Carmans River. This river is seen as a valuable natural and community resource, on the basis of discussions with members of the community, its recreational uses (such as fishing and canoeing), and its status as a state-designated "wild, scenic and recreational" river. (See also Section 16.6.) The river is surrounded by vegetation as it flows from northwest toward southeast. About a 1-mile segment of the river is located within 1 mile of the site. The shortest distance between the proposed Project location and an elbow of the river is a little less than 1 mile. Two impoundments along the river have created the Upper Lake and Lower Lake, both of which are a little more than 1 mile from the site. (The two principal intersections in Yaphank village are associated with these two locations. The village is described in the next section with other land uses that are more than 1 mile from the Project location.) Sills Road follows from Exit 66 toward the Upper Lake impoundment in Yaphank. Land on the east side of Sills Road and south of the Gerard Road intersection is unoccupied. Land at the Gerard Road intersection and north of it is residential.

North and northwest of the site (that is, on the west side of Sills Road and north of the LIE) is vacant forested land that is part of the Central Pine Barrens. The LIPA transmission corridor, which follows in a north-south direction at the site, begins to follow an east-west direction in this area. The transmission lines cross Sills Road on the north side of the LIE and from that point westward are parallel to and offset from the LIE. Along Sills Road, north of the Exit 66 interchange, is a Texaco gasoline station. North of the gas station, the western side of Sills Road is flanked by residences whose backyards face the forested zone. Beyond the forested land are residential cul-de-sacs, including a 27-lot new development, which can only be accessed from the north, via Mill Road. There are also some older residential developments on streets accessible from Sills Road near the very north of the 1-mile radius area. Along the north side of the LIE and west of the forested zone is a large agricultural tract. West of that tract the land use is residential, with single-family residences on both sides of Lincoln Road and Bellport Road.

West and southwest of the site (that is, west of Sills Road and south of the LIE), is a mostly vacant forested area bisected by the old Patchogue-Yaphank Road, which was retained as a cul-de-sac. All traffic, however, is routed from the old Patchogue-Yaphank Road to Old Town Road and onto Route 101 (Sills Road). Dumping of trash articles has taken place on both sides of the old Patchogue-Yaphank Road. West of the vacant zone is a large warehousing facility, with regular truck traffic. West of that is a large agricultural tract. Southwest of the warehousing facility are three residences, the closest of which is approximately 2,000 feet away. (It is one of the two closest residences to the proposed Project location.) There are more residences along Lincoln Road and Bellport Road, west of the agricultural tract. The LIRR separates the residential/agricultural area from other mostly vacant land. The active land uses south of the LIRR are some residences and a construction company

on the west side of Bellport Road, and several different land uses on the west side of Sills Road. The nearest of these is a light industrial building (about 1,500 feet from the site), the Calvary Gospel Church (about 2,800 feet away), a Suffolk County Authority water tower and well field (3,000 feet away), the New Interdisciplinary School (same distance), and four residences (approximately 4,000 feet away).

11.2.2 Land Uses Beyond 1 Mile

In the southern direction, the dominant land use feature is the Brookhaven Landfill, which rises to a height of 262 feet above sea level (approximately 200 feet above surrounding terrain). There is also an extensive excavation area between Horseblock Road and Woodside Avenue (Country Route 99). On the north side of Horseblock Road is a driveway leading to the Grucci Fireworks Complex. The use is not exclusively industrial, with the Horizon Village development located several hundred feet west of the landfill and south of Woodside Avenue. Some of the residences in this development are located within the 2-mile radius study area.

In the southeast direction, the primary land use features are Suffolk County facilities (west side of Yaphank Avenue) and sparse residential uses, located both along Yaphank Avenue and Gerard Road. The Suffolk County facilities in this zone include the sewer treatment plant (to which the Project is proposed to discharge wastewater), Fire Marshal's office, and Emergency Medical Services. North of those buildings are the aforementioned jail and the Skilled Nursing Facility. The closest residences within this section of the study area are those near the corner of Gerard Road and Yaphank Avenue. There is an agricultural field on the west side of Yaphank Avenue. In addition, there is a small shopping plaza at the intersection of Yaphank Avenue and Horseblock Road, and a soil excavation area along Horseblock Road.

In the eastern direction (and south of the LIE), there are three different types of land uses. In relation to from the Project site, the nearest are Suffolk County facilities, followed by residences, followed by the Carmans River and the surrounding Southaven County Park. The Suffolk County facilities in this zone are located on both sides of Yaphank Avenue, and include the old county infirmary, the Board of Elections, the Department of Public Works (including offices, maintenance garage and refueling, and a deicing salt shed), Mosquito Control, and Police Headquarters (including a heliport). South of the LIRR is a Georgia Pacific warehouse, and south of that – a farm. East of the county facilities are single-family residences along Park and Crescent streets. An equestrian oval is located at the end of Crescent Street. Other nearby residences (on Sterling Path) are accessible only from the south, via Gerard Road. The sprawling Southaven County Park is made up mostly of forested land, with firebreaks, paths, and some open areas. The study area also includes a

trap and skeet facility within the park. A small portion of the study area is beyond Southaven County Park – the intersection of River and Moriches-Middle Island roads.

In the northeast direction (north of the LIE) is the village area of Yaphank. East of the village are soil excavation and equestrian facilities. North of the village are residential areas and an expanse of vacant land within the Central Pine Barrens. Yaphank village is linear in character, with two focal intersections: Yaphank Avenue/Main Street near the Lower Lake and Mill Road/Main Street near the Upper Lake. Notable land uses at the lower end of the village are the Yaphank Post Office, several small businesses, two churches, a NYSDEC fishing access at Lower Lake, historic buildings near Lower Lake (described in Section 9 above), and residences on both sides of Main Street. Between the two nodes, along Main Street, the land use is almost exclusively residential. Yaphank cemetery is located north of Main Street and toward the lower end of the village. On the south side of Main Street, all development is only one layer deep, with backyards facing the woods that surround the Carmans River. Notable land uses in the upper end of the village are the Yaphank Presbyterian Church, the Yaphank Fire Department, Yaphank Commons, the town-owned Swezey-Avey House community center and adjacent town park, a Bell Atlantic depot, and several restaurants/delis.

North of the Mill Road/Main Street intersection is the Charles E. Walters School, adjacent fields, and other buildings of the Longwood School District (SD). North of the school complex, single-family residences line Yaphank-Middle Island Road (County Route 21), Shannon Street, and Raimond Boulevard. There is a considerable rise in elevation between the school and some of these residences. Several more residences can be found at the northern edge of the study area (south of Middle Island Country Club).

In the northwest and west direction (north side of the LIE), the predominant land uses are residential and agricultural. These include the private development of Siegfield Park, similar suburban-density development along German Boulevard and adjacent streets, a girl scout camp, and a horse farm. Further west along Mill Road, there are residential cul-de-sacs both to the south and north, as well as two small businesses. A prominent facility is the Mill Pond Golf Course. East of the golf course is a new residential development, currently under construction. North of the golf course, the study area includes a small portion of the Gordon Heights community, including the Granny Road Park (consisting mostly of playgrounds). Southwest of the golf course are residences along Country Road and Locust Avenue. Further west the study area includes much of the Eagle Estates development (off LIE Exit 65).

In the west and southwest direction (south side of the LIE), there are two contrasting types of uses. Nearer to the Project site are industries and commercial buildings, and

beyond them there is high-density suburban development. The industrial uses in this area range from an extensive junkyard/recycling facility along the LIE, to some lighter industries and offices along Horseblock Road. The South Silver Industrial Park is currently expanding in this zone. Along Sills Road, the development is commercial (a shopping plaza and restaurant) and also includes a large office building (Arrow Electronics). The suburban residential areas southwest of the industrial/commercial belt are relatively recent (since about 1970). They follow a superblock pattern, such that primary streets through this portion of the study area (Woodside Avenue, Sills Road) are separated from the residential development by fencing and landscaping, and typically two access point are provided per superblock.

11.3 Land Use Planning Initiatives

11.3.1 Brookhaven Comprehensive Land Use Plan

The current Brookhaven Comprehensive Land Use Plan was adopted in 1996. It places emphasis on appropriate economic development together with preservation and protection of natural and community resources. For purposes of land use planning, the town is divided into hamlets or groups of hamlets. For the Project site and the surrounding area (an area generally following the Longwood School District boundary, shown in Figure 13-2 below), a "mini-master plan" has been developed. The Longwood Mini-Master Plan states a desired direction for various types of future land development, including commercial, industrial, and residential. It also sets forth environmental, cultural, and agricultural priorities.

With respect to industrial development, the plan seeks to channel industries into the area of the proposed Project, including the Project site. The plan states that land "south of the LIE, close to the [school district] boundary should be designated as future site for industrial development." The Project site is south of the LIE and approximately 1,600 feet from the school district boundary. At the same time, industrial uses with the Special Groundwater Protection Area (SGPA) are discouraged in cases when groundwater will be threatened. However, the Project site is entirely outside the SGPA.

The plan identifies environmentally sensitive areas within Brookhaven, including wetlands, steep slope location, and ecological resources. It also references the Wild, Scenic, and Recreational Rivers zone, the 100-year flood zone, and coastal erosion hazard area. The site is outside all such zones.

Among several types of environmental and open space recommendations, none specifically mention the Project site. One general goal for the area is to plant street trees and preserve existing trees. There are several recommendations affecting Yaphank village and the Carmans River corridor, including preservation or enhancement of open space, the Tallmadge Trail and historic buildings in the area

(see Section 9). With respect to agricultural land, it is recommended that the Suffolk County Farm be preserved. Other, more distant agricultural parcels are also named, and their preservation is encouraged.

11.3.2 Agricultural Preservation

Agricultural preservation is one of several Suffolk County planning initiatives (which have included open space studies, bicycle route studies, etc.) The Suffolk County Farmland program allows the county to purchase development rights to farmland, thus effectively preserving it. It was the nation's first such program, dating to 1974. There is also an agricultural current-use tax program for parcels that stay in agricultural use. Agricultural districts are nominated under this program and certified by the New York State Department of Agriculture and Markets. Per the Natural Resources Conservation Service for Suffolk County, the Project site is outside an agricultural district.

11.3.3 The Central Pine Barrens

11.3.3.1 State Jurisdiction

The Central Pine Barrens were designated for preservation and protection under the 1993 Long Island Pine Barrens Protection Act (an amendment to Environmental Conservation Law Article 57). That act defined an approximately 100,000-acre zone within the previously established "Long Island Maritime Reserve". Approximately half of the Central Pine Barrens was designated as Core Preservation Area, and the other half as Compatible Development Area. The site is outside the Central Pine Barrens entirely (see Figure 11-3, *Groundwater Protection Areas*). Brookhaven Energy does not anticipate that any of the ancillary facilities to be studied in the Application (as described in Section 2.1) would be located north of the LIE, and hence the Project appears to be outside the jurisdiction of the Central Pine Barrens Commission pursuant to ECL Article 57.

11.3.3.2 County Jurisdiction

In March 1998, the Suffolk County Charter was amended to create a Suffolk County Pine Barrens Zone, which includes with the state-delineated Central Pine Barrens as well as other pine barrens ecosystems. In the area of the site, the delineation of the county and state pine barrens is identical. The site and its ancillary water and wastewater facilities therefore appear to be outside the county jurisdiction established under Section 14-11 of the Charter.

11.3.3.3 Town Jurisdiction

Brookhaven has adopted a portion of the Central Pine Barrens as a "Critical Environmental Area" for State Environmental Quality Review Act (SEQRA)

implementation purposes. The Central Pine Barrens under town jurisdiction are almost coterminous with the state and county definitions, but do not include Southaven County Park. The Project site and water and wastewater facilities appear to be outside the town "Central Pine Barrens Critical Environmental Area."

11.3.4 Coastal Zone and Local Waterfront Revitalization Plans

In New York State, the implementing agency for the state coastal zone management programs is the Department of State (DOS). Even though the site is not near a coastal zone (the nearest coastal zone is approximately 2.5 miles south of the site, see Figure 11-4, *Coastal Zone*), inland waterways can also be regulated in a way similar to coastal zones, for purposes of state regulations. If DOS approves a local waterfront revitalization plan (LWRP) pursuant to Article 42 of the Executive Law, the plan must be taken into account by any state agency with regulatory power over the Project. Brookhaven has made progress toward receiving a DOS approval of a local Waterfront Revitalization Plan, but there is currently no approved plan. When such a plan is approved, it is anticipated that it will affect only coastal areas and not the Project site or freshwater tributaries. For these reasons, the Project does not appear to be subject to the terms of any Waterfront Revitalization Plan.

11.4 Town and County Zoning

11.4.1 Brookhaven Zoning Ordinance

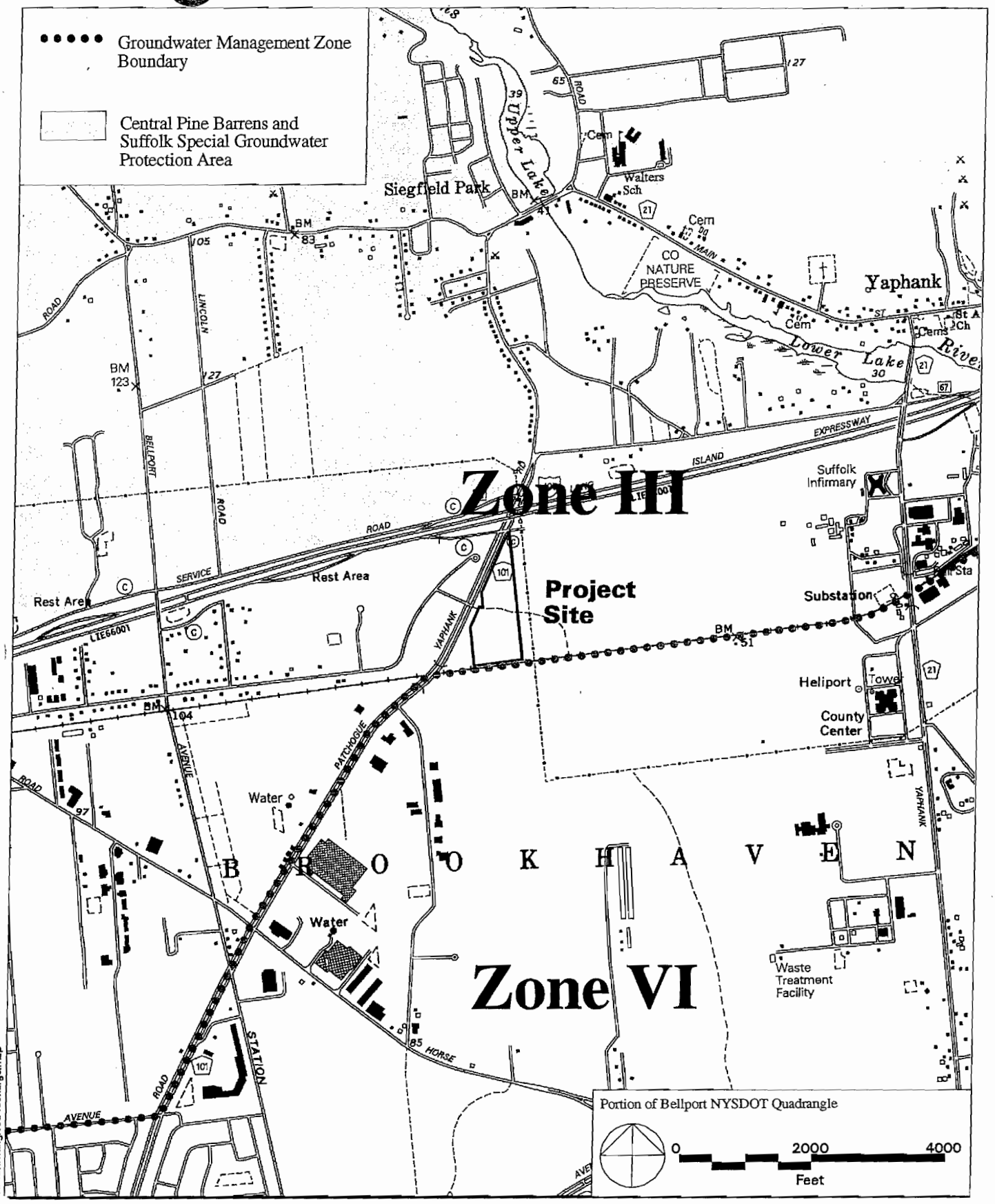
The Brookhaven Zoning Ordinance (Chapter 85 of the Brookhaven Code) establishes specific land use requirements, such as minimum lot size, setback requirements, and other limitations. The Ordinance also establishes zones and use categories.

11.4.1.1 Permitted Uses

The principal types of zoning districts in Brookhaven are Industrial, Business, and Residential. The Project site is within a large area that is zoned for the most part L-1 Industrial (see Figure 11-5, *Local Zoning*). Section 85-308 of the Code of the Town of Brookhaven, in defining "permitted uses" within the L-1 Industrial zoning classification provides that:

> "In the L Industrial 1 district, buildings, structures and premises may be used for any lawful business or industrial use, except as otherwise provided in this Chapter and except for the following prohibited uses:..."

Brookhaven Energy's proposed use is not included in the list of prohibited uses in Section 85-308.



Source: Suffolk County Dept. of Heath Services
Environmental Conservation Law Article 57.

Figure 11 - 3
Groundwater Protection Areas

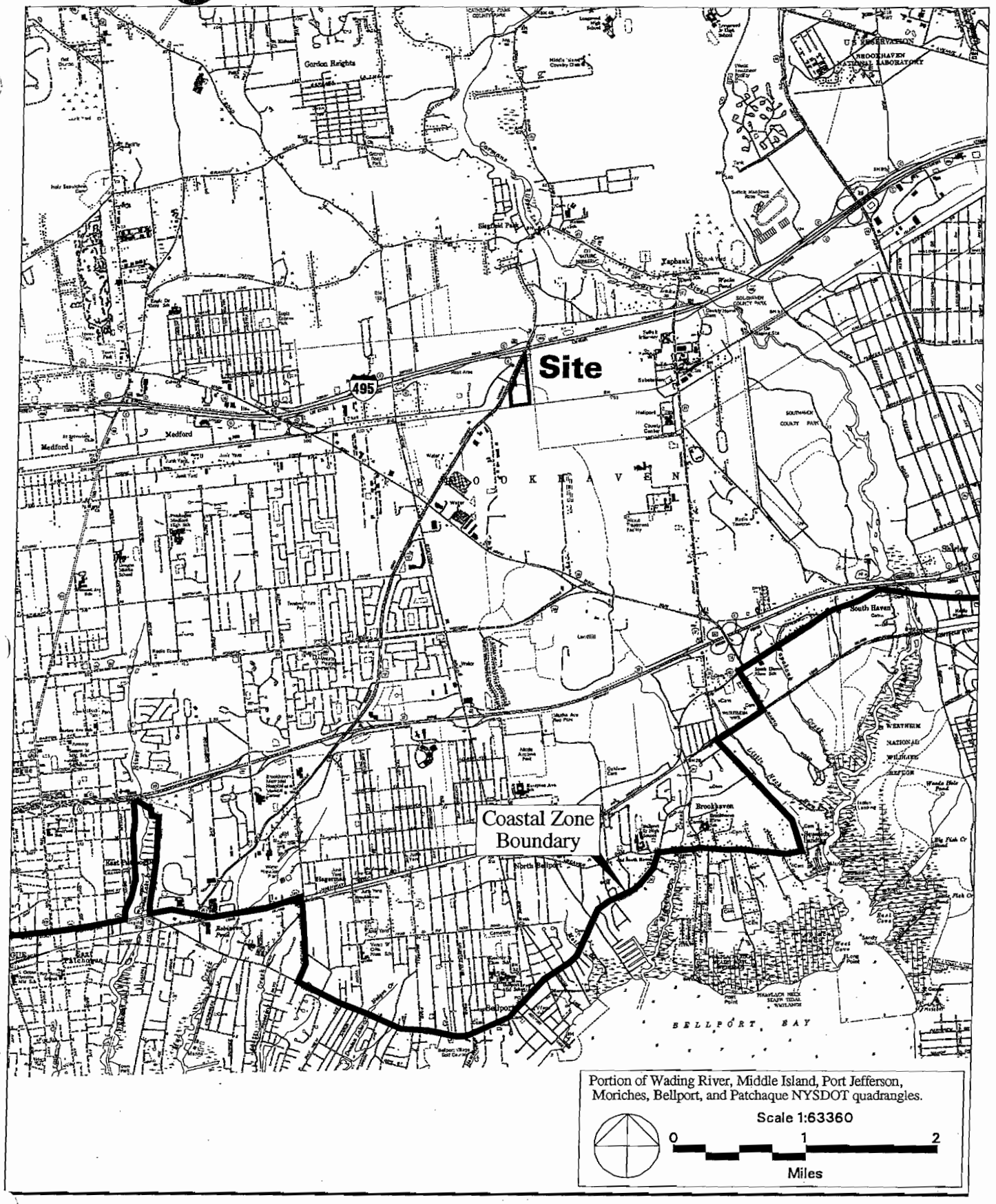


Figure 11 - 4
Coastal Zone

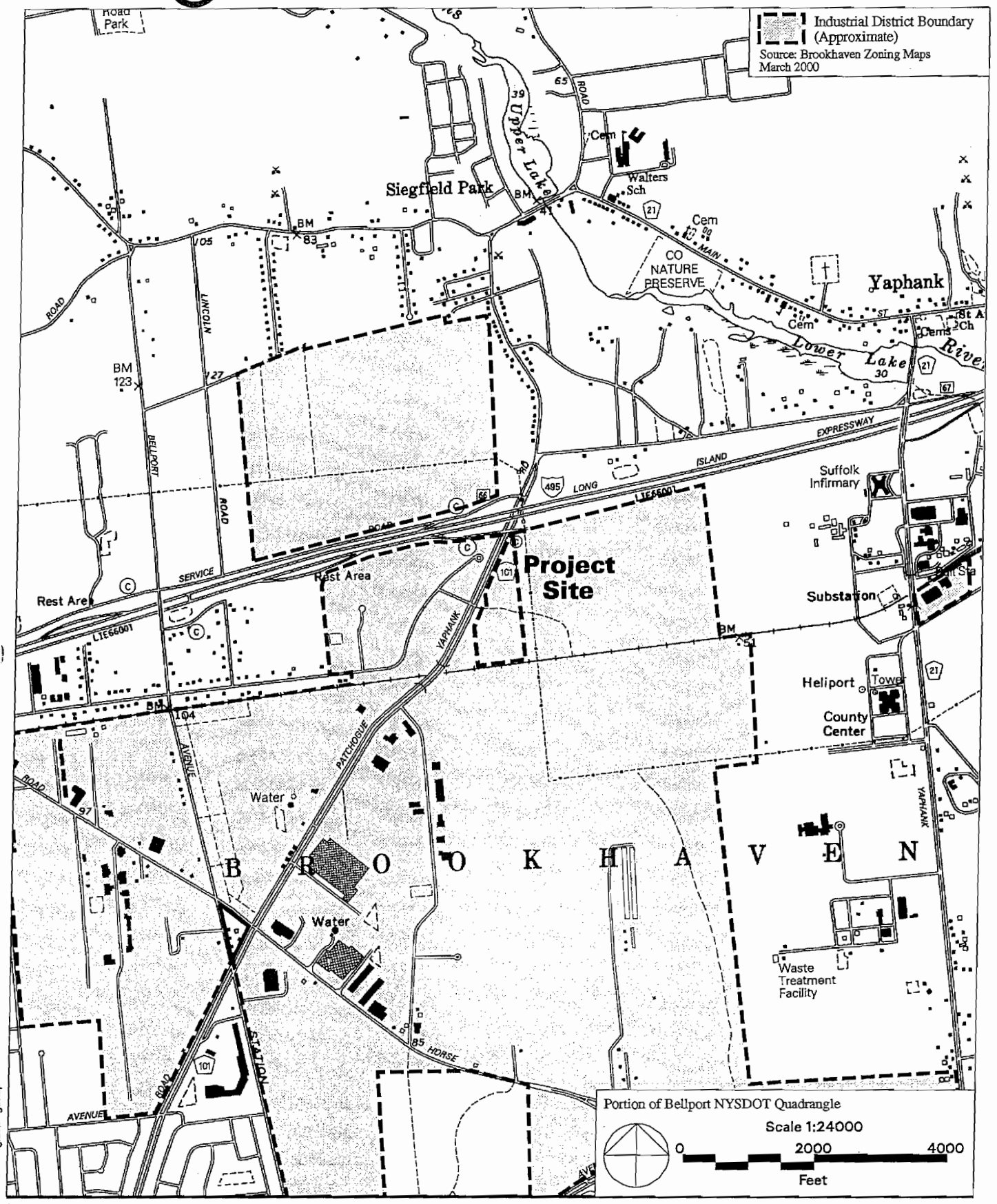


Figure 11 - 5
Local Zoning

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11.4.1.2 Site Plan/Subdivision Issues

Requirements for the Project site are those that apply in the L-1 district, as further supplemented by the provisions of Brookhaven's "hydrogeologically sensitive zone" (HSZ). A general requirement is to attempt to keep development compact, to the extent possible. Table 11-1 shows the key dimension limits.

Table 11-1: Dimension Limits Applicable to Project Site

Parameter	L-1 Industrial in HSZ
Maximum buildings area	30%
Maximum height	50 feet (cannot be met)
Maximum stories	3
Minimum lot area	20,000 square feet
Road frontage	200 feet
Minimum width @ 100-foot setback	NA
Minimum front yard setback	50 feet
Minimum rear yard setback	50 feet
Minimum combined width of side yards	50 feet
Minimum side yard setback	20 feet

Of the above-listed restrictions for the L-1 Industrial District within the HSZ, only one appears impossible to meet – the height restriction. It is not feasible to construct a modern combined cycle power plant of similar electrical output per unit without building heights greater than 50 feet. Brookhaven Energy therefore expects to petition the Siting Board to grant relief from this height restriction as a local law that is, in this case, "unreasonably restrictive in view of the existing technology." PSL §168.2(d).

11.4.1.3 Hydrogeologically Sensitive Zone

In addition to the above-described limitations, the Project is subject to additional requirements due to its location in the HSZ (Brookhaven Code, §85-309). The regulatory implications of federal designation as a sole source aquifer, state protection, and county protection are described in Section 16 of this document. Municipal land use restrictions for the HSZ are described here.

One purpose of the HSZ is to restrict the amount of lot coverage in order to achieve a higher level of groundwater recharge. There are several general and specific requirements for the HSZ. They are listed here.

- A presumption that projects in this zone require an environmental assessment under SEQRA – so-called "Type I" actions. This requirement is not expected to affect the Project because comprehensive review will occur through Article X. An Article X project is defined in state law as a Type II action (not requiring a SEQRA environmental assessment). ECL §8-0111.5(a)(ii)(b).

- Preference for natural vegetation over artificial landscaping. As much of the site's natural vegetation as is possible should be retained. Additionally, there is to be no greater than 15 percent coverage by turf and landscaping for disturbed land outside the power plant area.

- Financial assurance is required so that Brookhaven Energy will be able to complete "the immediate cleanup of spills or illegal discharges." The Brookhaven Planning Board is given authority under the ordinance to set forth an amount that Brookhaven Energy must supply as a surety bond. Brookhaven Energy expects that this requirement will probably be addressed together with the Siting Board's decommissioning requirements, which are set forth in the Siting Board regulations.

- The Commission of Planning, Environmental Protection and Development is empowered to approve any industrial discharge system.

11.4.2 Suffolk County Planning Commission

While zoning is traditionally a town function, larger decisions such as zoning amendments in certain areas must be reviewed by the Suffolk County Planning Commission, which relies on the staff of the Planning Department. Although other projects are also within the purview of the Planning Commission (county-wide master planning, planning assistance with town zoning measure, etc.), the authority to review town zoning is one of its explicit functions. Any rezoning must be reviewed if it is within one of a series of districts, including any site within 500 feet of a parkway, thruway, expressway, or highway.

The Project site is within 500 feet of the LIE, giving the Suffolk County Planning Commission review rights over such actions as rezoning. However, as indicated above, a change of zone will not be required for the Project site. (It should also be noted that the Suffolk County Planning Commission, when it has jurisdiction, makes a recommendation that can be overriden by the local municipality by a majority vote plus one). Brookhaven Energy has met and will continue to coordinate land use planning issues with staff of the Suffolk County Planning Department/Commission.

11.5 Initial Impact Analysis

11.5.1 Compatibility with Land Use and Zoning

Site selection, preliminary Project design, and the early consultation with agencies and the public have all been performed with the intention of limiting or avoiding potential adverse impacts to local land use. The site was selected in part because it was as far from residential areas as practically possible. It is in an industrial zone. It is consistent with Brookhaven's planning goals for industrial development. It does not create new interconnection rights-of-way. It appears that it can be built to meet the requirements of the HSZ and other Brookhaven local requirements, except for the building height limitation. The proposed Project is, in short, compatible with both existing and future land uses, comprehensive plans and zoning designations.

The Project's inability to meet Brookhaven's height restriction, and other non-conforming aspects of the Project if any are identified, will be fully addressed in the Application and with local authorities. Any zoning approvals (which are not expected) would be sought within the comprehensive Article X process.

11.5.2 Anticipated Mitigation Measures

Because the land use is appropriate, Brookhaven Energy does not anticipate mitigation measures applicable specifically to land use. Rather, mitigation will be in the form of noise abatement, visual buffering, etc. Aspects of the Project will continue to be refined so that the Project is consistent, to the greatest extent possible, with applicable local and county zoning and land use plans, and existing and future land uses in the vicinity of the Project.

11.6 Decommissioning and Restoration

The Siting Board regulations, require that the Application describe security funds or insurance in place or to be obtained as well as the financial resources available to restore any disturbed areas(s), in the event that the Project cannot be completed, or after decommissioning of the facility. 16 NYCRR 1001.7(b). A decommissioning plan must be developed. Brookhaven Energy's resources and contingency plans will ensure that these potential issues are accounted for and addressed in a responsible and thorough manner.

As part of the Article X Application Brookhaven Energy will develop a decommissioning plan to address the expected operational life of the facility and the types of activities that are proposed to ensure responsible environmental and economic decommissioning of the Project. This plan will include a schedule and activities to safely decommission the Project and restore the site to allow possible future site reuse. Further details regarding the decommissioning plan will be provided in the Application.

12.0 NOISE

12.1 Applicability

All new power plants in New York State are required to examine noise impacts and to control them. Generally, the emphasis of environmental noise regulation is toward noise-sensitive receptors, such as residences, near a facility that produces noise. The Public Service Law requires that Brookhaven Energy's Application include a noise study and document noise abatement measures. PSL §164.1(c)(i-ii).

This section presents information regarding a proposed measurement program to document existing noise levels in the vicinity of the Project, as well as the methodology to conduct a noise impact assessment under the Article X process. Baseline field measurements to establish existing noise conditions have been conducted during winter 2000, and another set of measurements will be conducted in spring 2000. An operational noise impact assessment will be performed using the Modified Composite Noise Rating (CNR) Method, and acoustic design goals for operational noise will be developed. Construction noise impacts will be estimated. In addition, an assessment of compliance with the Brookhaven Noise Control Ordinance will be conducted.

12.2 Existing Project Area Sound Levels

12.2.1 Measurement Types

Because the sounds in our environment usually vary with time, they cannot simply be described with a single number. Two methods are used for quantifying sounds: exceedance levels and equivalent level. The *exceedance* levels are the sound levels exceeded a given percent of the time. For example, the residual octave band sound pressure levels (L_{90}) is the sound level exceeded 90 percent of the time during a measurement period (almost the lowest sound level observed). The L_{90} is the measure typically used when defining background sound levels. The *equivalent* level, designated L_{eq}, is an average of sounds measured over time. It is strongly influenced by occasional loud, intrusive noises. Because it is able to account for such noises, the L_{eq} is the best descriptor for the intermittent sound levels from construction activities.

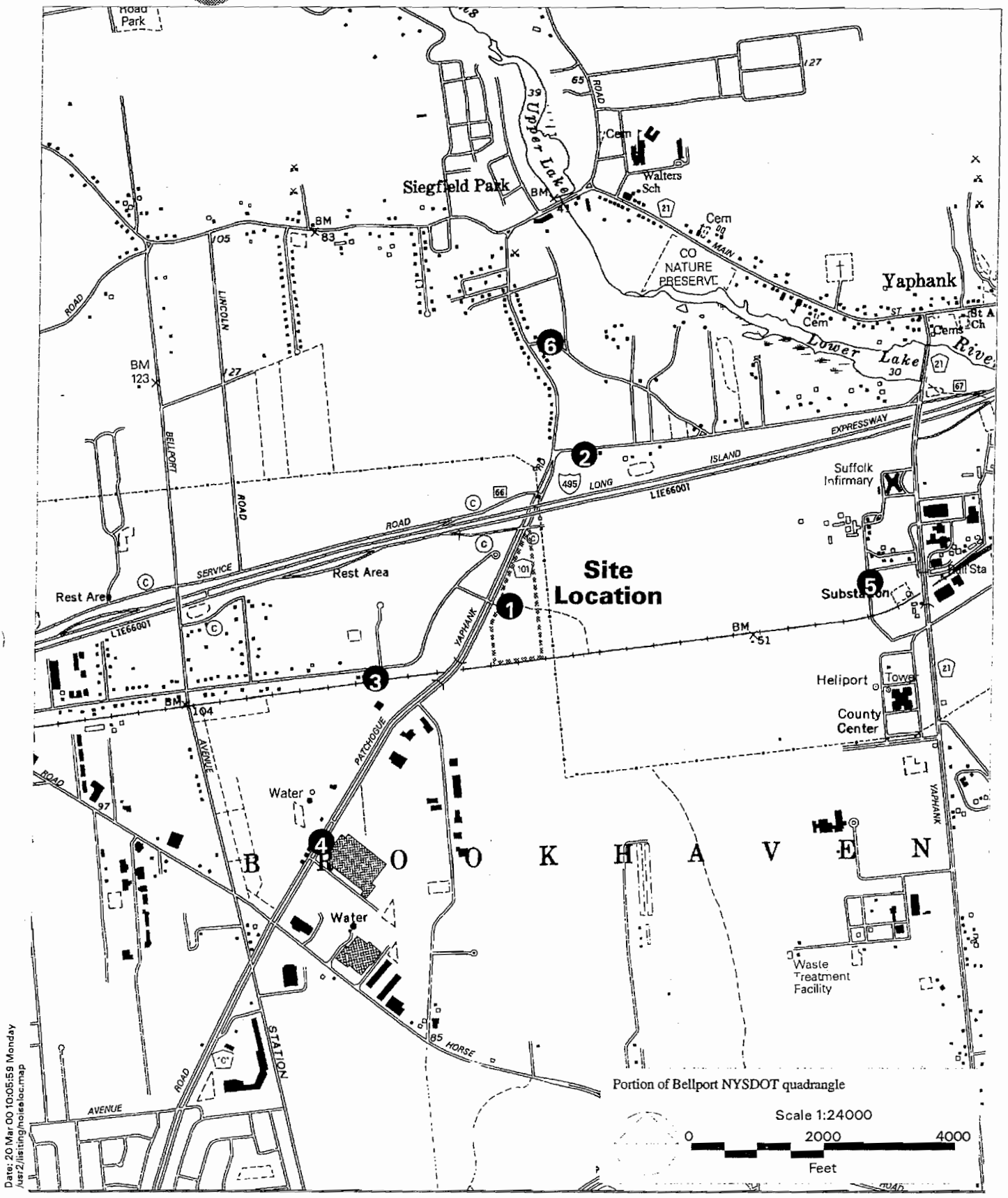
The human ear is more sensitive to sounds of middle frequencies, and less so to sounds of high or low frequencies. A weighting scale, known as the "A" scale, has been developed to approximate the response of the human ear, and decibels are often listed as A-weighted decibels (dBA).

12.2.2 Measurement Locations and Periods

An ambient noise level survey is being conducted during two different time periods to characterize the existing noise environment in the vicinity of the Project site. The dual survey is designed to characterize the ambient noise environment under both cold weather/leaf-off conditions, as well as warmer weather/leaf-on conditions. To date, cold weather measurements have been taken. The measurement program consisted of a consecutive weekday and weeknight period at six measurement locations, complemented by continuous 24-hour measurements during both weekday and weekend periods at the two nearest residential locations.

On February 9, 2000, a tour of the site and the surrounding area was made to establish the locations of the nearest noise sensitive receptors in representative directions from the Project. Six measurement locations were selected to obtain an adequate spatial representation of the ambient noise environment. The measurement locations include a property-line measurement as well as the residences and noise-sensitive land uses nearest to the plant. None of the residences are closer than 2,000 feet, based on the site plan presented in this Preliminary Scoping Statement. Figure 12-1 depicts the residential and property-line noise measurement locations. Location 1 is a point at the property line and is representative of ambient on-site conditions. Location 2 is adjacent to the nearest residence on Long Island Avenue northeast of the Project site and across the LIE (110 Long Island Avenue). Location 3 is adjacent to the nearest residence on Long Island Avenue west of the Project site (109A Long Island Avenue). Location 4 is at a residence near the New Interdisciplinary School on Route 101 southwest of the site (444 Patchogue-Yaphank Road). Location 5 is a point at the Suffolk County Farm, east of the site. Location 6 is a more distant point near the intersection of Sills Road and Gerard Road, a location that can be useful in determining highway and other types of noise dissipation.

Ambient sound level measurements were made for approximately 20 minutes per location at all monitoring locations during the daytime and nighttime periods of February 9-10, 2000. In addition, continuous unattended hourly A-weighted measurements were made at Locations 2 and 3 (the nearest residences) over the period February 9-13, 2000 (Wednesday afternoon to Sunday night). For the 20-minute samples, a concurrent octave band sound pressure level spectrum analysis was also made at each receptor location along with the broadband A-weighted levels. Residual octave band sound pressure levels (L_{90}) were measured within each of nine frequency ranges to quantify the general spectrum shape and frequency content of the existing ambient noise.



6 Noise Measurement Location

Figure 12 - 1
Noise Measurement Locations

12.2.3 Baseline Sound Levels

Tables 12-1 through 12-3 contains the sound level data measured in February 2000.

Table 12-1: Ambient Sound Levels, Short-term Measurements, February 2000

AMBIENT STATISTICAL SOUND LEVELS

dBA (re: 20 microPascals)

Wednesday, February 9, 2000 – Daytime

Position Description	Time*	L_{10}	L_{50}	L_{90}	L_{max}	L_{eq}	Observed Noise Sources
1. On Site (off of Patchogue Yaphank Road)	14:40	63	59	56	78	61	Vehicular traffic on Patchogue-Yaphank Road and LIE
2. 110 Long Island Avenue Residence	15:33	65	63	61	75	63	Long Island Avenue vehicular traffic, vehicular traffic on LIE
3. 109A Long Island Avenue Residence	15:08	57	52	51	76	56	Vehicular traffic on LIE and Long Island Avenue, aircraft overflights
4. 444 Patchogue Yaphank Road Residence	16:20	62	55	51	73	58	Patchogue Yaphank Road vehicular traffic, aircraft overflights
5. Suffolk Company Farm & Education Center	16:46	55	53	52	67	54	Police shooting range, vehicular traffic on LIE and Horseblock Road
151 Gerard Road Residence	15:55	59	56	53	70	57	Patchogue Yaphank Road and LIE vehicular traffic, birds

* Start time of 20 minute sample

Meteorology: mostly sunny, $T_{dry\text{-}bulb} = 45°$ F, $T_{wet\text{-}bulb} = 40°$ F, RH = 65%, winds SW at 5-9 mph

Thursday, February 10, 2000 – Nighttime

Position Description	Time*	L_{10}	L_{50}	L_{90}	L_{max}	L_{eq}	Observed Noise Sources
1. On Site (off of Patchogue Yaphank Road)	1:36	53	47	41	68	50	Traffic on Patchogue Yaphank Road, hum from transmission lines
2. 110 Long Island Avenue Residence	2:44	59	53	46	68	56	Traffic on LIE, Long Island Avenue, and Patchogue Yaphank Road
3. 109A Long Island Avenue Residence	0:53	50	47	43	66	48	Vehicular traffic on LIE, distant train horns, unknown buzzing
4. 444 Patchogue Yaphank Road Residence	1:16	52	44	39	68	49	Traffic on LIE, Patchogue Yaphank Road, and Horseblock Road
5. Suffolk Company Farm & Education Center	2:00	46	41	38	57	43	Vehicular traffic on LIE, substation transmission lines
6. 151 Gerard Road Residence	2:21	53	46	37	65	49	Vehicular traffic on LIE and Patchogue Yaphank Road

* Start time of 20 minute sample

Meteorology: clear skies, $T_{dry\text{-}bulb} = 30°$ F, $T_{wet\text{-}bulb} = 29°$ F, RH = 94%, winds W at 2-3 mph

Table 12-2: Ambient Sound Levels at Nearest Residences (Long and Short-term Measurements)

AMBIENT STATISTICAL L_{90} SOUND LEVELS

dBA (re: 20 microPascals)

Position Description	Week Day Long-term	Week Day Short-term	Week Night Long-term	Week Night Short-term	Weekend Day Long-term	Weekend Night Long-term
1. 110 Long Island Avenue Residence	56	61	50	46	52	46
2. 109A Long Island Avenue Residence	50	51	43	43	43	44

Notes: Short-term Measurements from Table 12-1 above. Long-term Measurements are arithmetic averages of hourly readings. Daytime is 7:00 a.m. to 10:00 p.m. Night time is 10:00 p.m. to 7:00 a.m.

Table 12-3: Ambient Sound Level Data by Octave Band

WEEKDAY DAYTIME AND NIGHTTIME AMBIENT SOUND LEVEL SURVEY
RESIDUAL OCTAVE BAND SOUND LEVELS (L_{90})

dB (re: 20 microPascals)

Wednesday, February 9, 2000 – Daytime (see Table 12-1 for exact times)

Position Description	Octave band center frequency (Hz)								
	31.5	63	125	250	500	1000	2000	4000	8000
1. On Site (off of Patchogue Yaphank Road)	59	61	58	51	51	53	46	36	30
2. 110 Long Island Avenue Residence	61	61	55	53	57	59	50	35	23
3. 109A Long Island Avenue Residence	58	60	52	47	48	48	39	28	23
4. 444 Patchogue Yaphank Road Residence	57	60	58	48	48	47	40	29	19
5. Suffolk Co. Farm & Education Center	57	60	58	49	48	49	40	23	13
6. 151 Gerard Road Residence	57	59	55	49	50	50	42	30	23

Thursday, February 10, 2000 – Nighttime (see Table 12-1 for exact times)

Position Description	Octave band center frequency (Hz)								
	31.5	63	125	250	500	1000	2000	4000	8000
1. On Site (off of Patchogue Yaphank Road)	46	46	42	35	38	38	28	15	13
2. 110 Long Island Avenue Residence	50	46	40	41	41	43	35	21	13
3. 109A Long Island Avenue Residence	48	48	41	38	41	41	31	17	14
4. 444 Patchogue Yaphank Road Residence	52	49	44	37	37	36	25	14	12
5. Suffolk Co. Farm & Education Center	50	48	46	39	35	32	24	18	13
6. 151 Gerard Road Residence	47	46	41	35	34	33	23	12	12

Table 12-1 is a summary of all six, measurement locations, using A-weighted sound levels. The L_{90} background noise levels at the two nearest residential points are shown in Table 12-2. Short-term measurements by octave band are listed in Table 12-3. The predominant source of background sounds is vehicular traffic, which is present not only on the LIE but also on County Route 16 (Horseblock Road), County Route 101 (Sills Road/Patchogue-Yaphank Road), and Long Island Avenue (both north and south of the LIE). Additional noise sources are listed in Table 12-1.

12.2.4 Survey Weather Conditions

Measurements have been and will continue to be made under low wind conditions with dry roadway surfaces and no precipitation. The February 2000 measurements were conducted with a small amount of snow cover interspersed with areas where snow had previously melted. Weather conditions during the February 2000 measurements were as follows. Daytime weather conditions on February 9 consisted of mostly sunny skies, temperature of 45°F, relative humidity of 65 percent, and light winds from the southwest at 5 to 9 mph. Nighttime weather conditions on February 10 consisted of clear skies, temperature of 30°F, relative humidity of 94 percent, and a light wind from the west at 2-3 mph. Meteorological conditions were measured on-site using a Weksler sling psychrometer, a hand-held Dwyer wind gauge, or obtained from nearby National Weather Service station data at Long Island MacArthur Airport in Islip. Relative humidity data from Islip were necessary for periods when freezing temperatures invalidated on-site wet bulb temperature readings.

12.3 Information Requirements and Methodology

12.3.1 Impact Assessment Procedures

Baseline field measurements will be conducted again during the spring to characterize existing noise conditions further. An operational noise impact assessment will be performed using the Modified CNR Method and in comparison to Brookhaven town limits. Acoustic design goals for operational noise will be developed. These are anticipated to be levels that comply with both the town limits and a Modified CNR ranking of "D" or less, a noise limit that has historically been applied to power plants in New York. In addition, construction noise impacts will be estimated.

The noise impact assessment will be based in part on acoustic power levels supplied by ABB Alstom Power. The proposed methodology for assessing the potential impacts from noise will then follow procedures and use predictive techniques provided in documents such as:

- Edison Electric Institute, *Electric Power Plant Environmental Noise Guide*, 2nd Edition, Bolt Beranek and Newman, Inc. Report No. 3637, 1984.

- United States Environmental Protection Agency, *Model Community Noise Control Ordinance*, US EPA Report No. EPA 550/9-76-003, September 1975.

- United States Environmental Protection Agency, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, US EPA Report NTID300.1, December 1971.

12.3.2 Noise Standards

The Modified CNR method is a sociologically based noise evaluation procedure that considers the measured existing community sound levels along with the proposed Project's predicted operational sound levels to rank the acceptability of the proposed noise source within the current environment. The ranking is then adjusted to account for other potential factors such as the time of day the noise will be present, seasonal variations, frequency distribution, and the tonal and impulsive character of the emitted sound.

Brookhaven has a noise control code (Chapter 50 of the Brookhaven Code) that addresses both construction and operational noise. With respect to construction activities, the code prohibits any excavating, earth moving, or demolition work between the hours of 6:00 p.m. and 7:00 a.m. on weekdays, and all day on Saturdays, Sundays and Holidays. With respect to operational noise, the noise control code prohibits a noise contribution of more than 50 dBA at the nearest residence or its property line. The daytime limit is 65 dBA. For industrial parcels, which surround the site on all sides except the northern tip, the limit at the property line is understood to be 75 dBA.

12.4 Initial Impact Assessment and Mitigation Measures

12.4.1 Construction Noise

Construction of the Project will occur over a period of approximately 24 months. Construction noise is highly variable. Many construction machines operate intermittently and the types of machines in use at a construction site change with the construction phase. The methodology to be used in estimating construction noise impacts for the Project is detailed in United States Environmental Protection Agency, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, US EPA Report NTID300.1, December 1971. This construction noise document includes a model for predicting energy-average (that is, L_{eq}) construction noise levels for industrial facilities.

On the basis of the EPA noise model (which estimates noise at 50 feet from the source), an estimate of construction noise levels will be made at each of the nearest receptors. This estimate will be calculated using a hemispherical free field noise prediction model that uses geometrical spreading, atmospheric and anomalous

attenuation, on-site structural barrier effects, and any prominent terrain features. The impacts from construction noise will be compared to existing measured sound levels.

Construction noise is difficult to control because of the mobile nature of its sources and the flexibility of schedule inherent in most construction work. However, construction is also temporary in nature. In order to mitigate the possible effect of noise caused during the temporary construction period, the Project will use sound muffling devices on construction equipment to the extent practical, and outdoor work will be scheduled for daytime hours to the extent practical. In addition, the Project will comply with federal regulations limiting truck noise. Because of the temporary nature of the construction noise, no adverse or long-term effects are anticipated.

Among the mitigation measures to be studied, the Project will likely coordinate and in some cases notify the nearest businesses and residences of any periodic activity producing atypically loud noises.

12.4.2 Operation Noise

The Project will be designed to operate up to 24 hours per day, and measurement of impacts at nighttime periods is therefore appropriate. Detailed sound level reference

data will either be obtained from the equipment vendors, measurements made from comparable equipment on another project, or calculated using techniques prescribed by the Edison Electric Institute Guide[11].

An estimate of future noise levels will be made at each of the nearest receptors due to operation of the Project using a hemispherical free field noise prediction model that uses geometrical spreading, atmospheric and anomalous attenuation, on-site structural barrier effects, and attenuation from any prominent terrain features. The impacts from operational noise will be compared to existing measured sound levels, analyzed through the modified CNR method, and compared to the Brookhaven town standards.

Modeling will be used to determine the potential noise effect of the Project under normal operational conditions. Since sound levels decrease with increasing distance, sound levels will be modeled at the nearest residences (for the modified CNR analysis), as well as at the property line (for the Brookhaven town code analysis). All estimates at receptor locations will be for noise levels at 5 feet above ground – approximately the height of a standing person. Compliance with the Project design goals at these nearest locations ensures compliance with receptors at more distant locations. Noise abatement measures will be identified and evaluated where applicable to reduce sound level impacts from operational noise due to the Project. Among the likely mitigation measures is that the Project will coordinate with its neighbors regarding any brief, periodic, atypically loud activities.

12.5 Post-Construction Noise Evaluation

As part of Project testing (that is, after Project construction), ambient background and operational noise measurements will be taken at the nearest sensitive receptors used in the pre-construction baseline measurement program. The results of this measurement program will be used to ascertain conformance with the Project's noise design goals and the Brookhaven town limits.

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11 Edison Electric Institute, *Electric Power Plant Environmental Noise Guide*, Volume I, 2nd Edition, Bolt Beranek and Newman, Inc. Report No. 3637, 1984.

13.0 SOCIAL AND ECONOMIC IMPLICATIONS

13.1 Applicability

This section addresses the study of social and economic effects of the Project, and provides certain economic, demographic, and safety information. The Project will be a major source of investment in the local economy, especially local labor markets – an activity that also yields secondary beneficial economic effects. At the same time, the locally available labor pool is so extensive that most specialized construction and operational labor should be available in the area. Safety and emergency response issues are also addressed. Safety of the proposed Project is of fundamental importance both to Brookhaven Energy and the community. Its inclusion, in terms of a description of safety features, is also required by Article X and the Siting Board regulations. PSL §164.1 and §168.2, 16 NYCRR 1001.3.

13.2 Anticipated Benefits

13.2.1 Types of Benefits

The proposed Project will benefit Brookhaven and Long Island by increasing local employment opportunities and expanding the local economy during both its construction and operation phases, and is expected to do so without a significant increase in demand on local services. The Project will also contribute revenues to the Longwood School District and to Brookhaven. As a competitor against the existing fleet of power generation that supplies Long Island, the Project will help to lower the cost of electricity on Long Island. It will be a clean, reliable, competitively priced source of electricity for Long Island.

13.2.2 No Stranded Costs

Given Long Island's difficult experiences with the burden of utility stranded costs, it is important to stress that the Project would be built solely at the risk of its investors and shareholders – not Long Island electricity customers. If after some period of time the Project is not competitive, it would be either decommissioned (again, at the cost of the owner, not customers) or upgraded in order to once again be competitive with future technologies.

13.2.3 Construction

The construction labor force will be comprised of local workers to the fullest extent possible. A variety of skilled workers will be employed during various phases of Project construction, including boilermakers, carpenters, crane operators, electricians, ironworkers, laborers, masons, millwrights, plumbers, pipefitters, and sheet metal workers. Local trade and service establishments will realize increased business. Local goods and services will also be purchased whenever possible. Local

retail and commercial establishments can expect increased business during construction. No significant increase in municipal services should be required during construction.

Due to the excellent infrastructure around the Project site, no significant demand on local police or fire resources is anticipated. Because the construction work will occur over a relatively limited time period and is expected to draw upon the existing regional workforce, no or minimal increased demand on local school districts is expected. This will be studied in more detail in the Application.

13.2.4 Operation

Once in operation, the Project will continue to provide economic benefits to Brookhaven, the Longwood School District, and the region. The Project will become a significant contributor of revenues without significantly drawing upon other municipal or school resources. In addition to local and regional economic benefits derived from lower electricity prices, system reliability will be enhanced by the addition of electric generating capacity close to Long Island electrical loads.

On-site fire protection equipment will be available, and emergency plans will be developed in coordination with local emergency services to ensure that appropriate staff and equipment will be available to respond effectively to emergencies.

13.3 Social and Economic Setting

According to the latest available population estimate prepared by the Long Island Power Authority[12], more than 434,000 people lived in Brookhaven in January 1999, compared to a population of about 408,000 enumerated in the 1990 Census. Therefore, Brookhaven has been growing at an annual rate of about 0.7 percent. Brookhaven's 20th-century growth rate is shown in Figure 13-1. The hamlet of Yaphank, which is an area LIPA defined in making population estimates, subsumes all areas within a mile of the Project site (see Figure 13-2, *School District and Hamlet Boundaries*). It is estimated to have had 4,560 residents in January 1999. This figure includes an estimated 562 inmates at the county correctional facility and an estimated 250 people living in the Suffolk County Skilled Nursing Facility.

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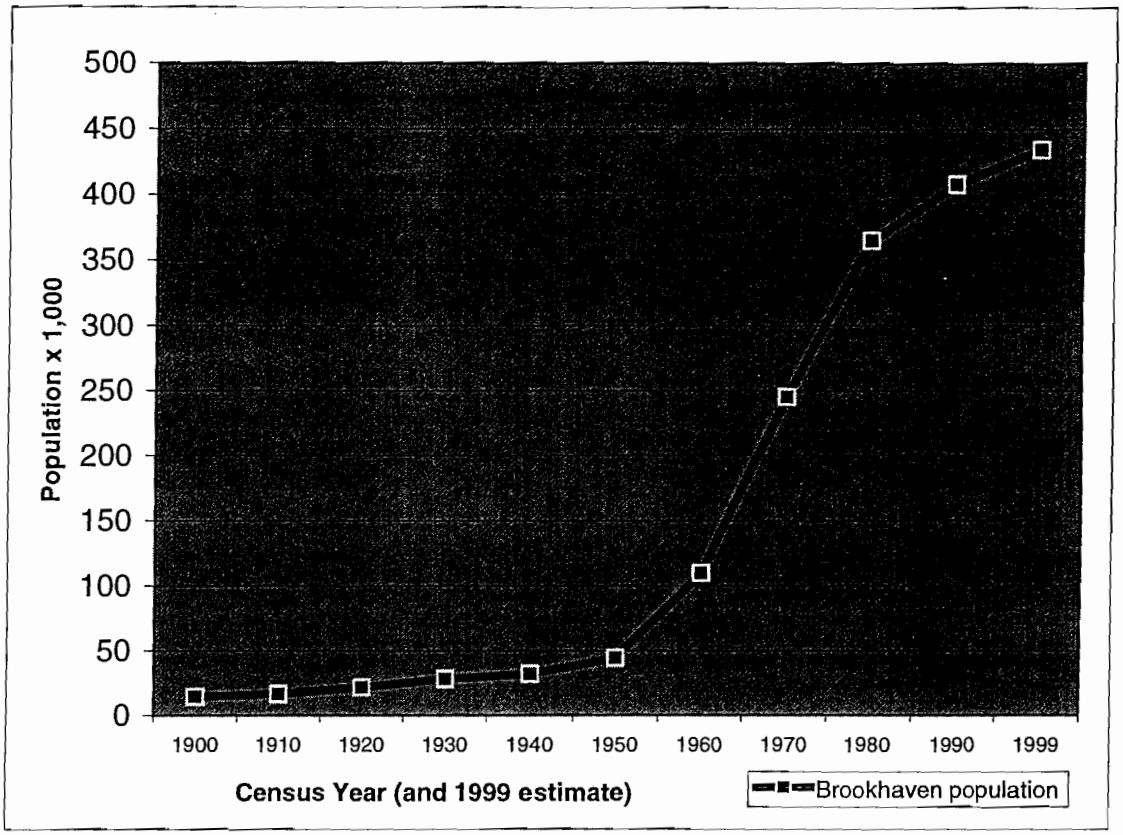
[12] Long Island Power Authority, *Long Island Population Survey, 1999*, published October 1999.

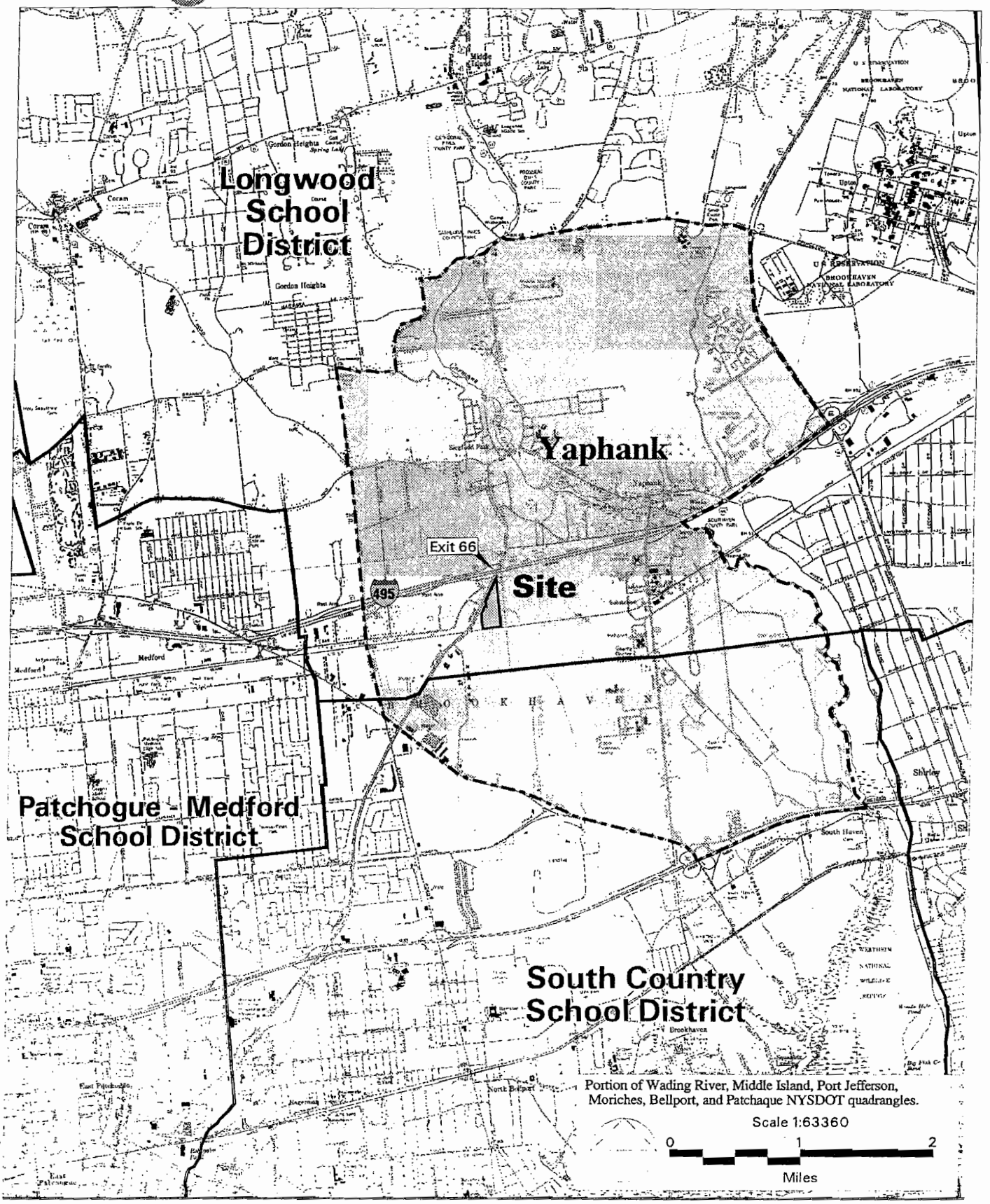
Figure 13-1: Twentieth-century Population, Town of Brookhaven



The 1999 LIPA estimate of county population is greater than 1,372,000. Brookhaven accounts for nearly one-third of Suffolk County's population and more than one-quarter of its land area[13]. West of Brookhaven, Suffolk County is densely populated and has an urban center in Islip. East of Brookhaven, settlement is more sparse, but density is increasing. Brookhaven's current density of 1,676 persons/square mile is close to the county average of 1,506 persons/ square mile (calculations using 1999 estimates).

In terms of population age, Suffolk County in the last 20 years has seen trends that are generally consistent with suburban locations: increases in the number of senior citizens, decreases in school-age population in the 1980s, with a rebound of school-age population in the 1990s. In Brookhaven, the 1990 Census showed a slightly greater percentage of minors within the population (27% in Brookhaven; 25% in the county) and a slightly smaller percentage of senior citizens (10% in

[13] Brookhaven has a land area of 259.3 square miles, including incorporated villages within town boundaries, and a total area of 386 square miles. Suffolk County's land area is 911.2 square miles.



School District Boundary

Hamlet Boundary
(for LIPA population
estimate only)

Figure 13 - 2
School District and Hamlet Boundaries

Brookhaven, 11% in the county). 63 percent of the Brookhaven's population (and 64% of the county population) was of working age. However, the Suffolk County Planning Department reports that the number of births in the county has been at "near or above record levels since 1988," and elementary school overcrowding has ensued in some locations. The 2000 Census will likely demonstrate a shift toward a higher percentage of the population below the age of 18.

In terms of income, Suffolk County and the Nassau-Suffolk metropolitan area have for a long time been among the wealthiest in the nation.[14] Based on 1997 figures, the average household effective buying income for the two-county region was $59,317 compared to a national average of $42,191. The median household income for Suffolk County, adjusted to 1998 dollars, is estimated to be $65,303. In 1990, Suffolk's per capita income ranked 21st among the nation's 3,110 counties.

During the late 1980s and through the mid 1990s, Long Island saw defense-related job losses, most notable of which was the loss of several thousand jobs associated with restructuring of the Grumman corporation. Yet on balance the prolonged economic prosperity of the 1990s has reduced unemployment to very low levels. The Suffolk County Department of Labor reported unemployment in November of 1999 at 3.2 percent. (In November 1998, it had been 3.0%.) New York State's November 1999 unemployment was 4.8 percent. The national unemployment rate was 4.1 percent. In terms of employment sector, 33 percent of Long Island's workforce is employed in services, while 25 percent is engaged in wholesale/retail trade. The next highest sector is government, with 16 percent of Long Island's employees.[15]

13.4 Economic Analyses

13.4.1 Secondary Economic Effects

"Secondary economic effects" are the additional spending and investment that occur due to a project's initial investment, including increases in earnings and new jobs. To calculate such effects, Brookhaven Energy will consult with US Department of Commerce, Bureau of Economic Analysis for the purpose of obtaining input-output multipliers. Input-output models track various types of investments and correlate them with economic growth. By doing so, they make it possible to estimate the economic multiplier effects of the Project's investment for local shops, service suppliers, parts suppliers, and labor market. The Bureau is able to provide county-

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[14] As reported by Suffolk County Planning Department, October 1999, regarding *Sales and Marketing Management* surveys of buying power.

[15] Suffolk County Department of Labor, *Economic Indicator Report*, January 2000. These reports may be found on the Internet at http://www.co.suffolk.ny.us/labor.

specific and industry-specific multipliers. Thus, Brookhaven Energy will obtain data that are specific to Suffolk County, to industrial construction, and to electric generating facility operation. Empire State Development (New York State Department of Economic Development) will also be consulted regarding any New York State-specific alternative approaches to study economic multiplier effects.

To assess the Project's economic effects, Brookhaven Energy will first estimate the number of workers that will be required both during construction and operation. Generally, the most pronounced economic benefit in terms of the number of jobs will be during construction, although the operations jobs associated with the facility will require skilled and qualified local labor. Approximately 25 employees are anticipated during operation. A peak workforce of about 700 employees are anticipated during construction. The estimate of economic effects, to be made during the upcoming economic study, will break the work force down by trade and by the stage of construction when their services will be needed, to the degree that such information is available. Then, using the regional multipliers obtained from the Bureau of Economic Analysis, Brookhaven Energy will estimate the additional indirect economic infusion that the Project will provide. This will be a calculation of capital and labor investment within the region, multiplied by the appropriate multipliers for an energy facility being built and operated in the region. It will include an estimate of indirect increases in regional earnings, and indirect job creation due to the Project.

13.4.2 Work Force Availability and Accommodation

Availability of work force depends upon the trade or profession that is required. Thus, the information on worker availability will be requested from the appropriate local labor organization representatives. Information will be requested regarding the availability of the various trades and their expected commuting distance. Presently, it is expected that workers will be willing to commute from Long Island, from New York City, from northern New Jersey, and from some areas north of New York City, as well as by ferry from Connecticut. For trades in which there is the possibility of a labor shortage, the representatives will be asked about existing or potential reciprocal arrangements. If any cases are identified in which local labor representatives do not believe that sufficient labor exists within commuting distance (including reciprocal arrangements), an assessment of the likely number of in-migrating workers will be made by subtracting the required work force, by trade and project stage, from the available work force.

If the study of work force requirements versus the available labor supply reveals that there will need to be an in-migration of workers, Brookhaven Energy will then study

the impact of such temporary workers' accommodation. If there is sufficient labor supply within commuting distance, then this analysis will not be needed and will not be conducted.

13.4.3 Taxation of Real Property

Brookhaven Energy will identify all public jurisdictions that currently assess property tax or benefit charges on the Project site. Brookhaven Energy will obtain the most recent assessed value and, for each jurisdiction, the most recent tax rate on the property. Likewise, the taxes levied will be listed.

13.5 Safety and Emergency Response

As described in the beginning of this section, safety is an issue that must be addressed for any project under Article X. Included in Brookhaven Energy's proposed scope is a description of all on-site equipment and systems to be provided to prevent or handle fire emergencies and hazardous substance incidents, much as already described in Section 2.3.5, "Protection Systems." Any further details will be provided as the site plan is developed, and these will be submitted with the Application. The basic parameters of New York State's Uniform Fire Prevention and Building Code, NFPA 850 regulations, and the Brookhaven fire regulations (Chapter 30 of the Brookhaven Code) will be outlined.

Also included will be a description of contingency plans to be implemented in response to the occurrence of a fire emergency or a hazardous substance incident. As an appendix to the Application, Brookhaven Energy anticipates that it will submit a draft emergency plan. This plan cannot be finalized until the facility is actually built, but the key parameters of the plan will be known in the draft. Once built, emergency response at the Project will be implemented in accordance with this emergency response plan, which will be continuously updated to reflect improvements in industry safety standards.

The purpose of the emergency plan is to define both the preventative measure and the response measure for various types of emergencies, in order to ensure maximum preparedness for various unlikely emergency events. Brookhaven Energy may examine existing emergency response arrangements at nearby facilities as part of emergency plan development. Attachments within the final plan will include emergency phone numbers, standard operating procedures to respond to different types of events, medical emergency information, fire emergency response, law enforcement/security response, severe weather emergency response, and other specifics.

13.6 Initial Impact Assessment and Mitigation

The construction and operation of the Project is not expected to have a significant adverse impact on the socioeconomic setting of the area. Instead, Brookhaven Energy expects a substantial positive impact because the Project will widen the tax base, add many construction jobs as well as high-skill permanent jobs, and will significantly lower the generation cost component of electric rates. Therefore, no socioeconomic mitigation measures are currently planned in conjunction with the construction or operation of the Project.

14.0 TRAFFIC AND TRANSPORTATION

14.1 Applicability

This section addresses the traffic that the Project will generate during construction and operation. Traffic, like social and economic effects, is not explicitly listed in the Public Service Law or the Siting Board regulations. However, it is an important issue of local concern and is typically studied under local site plan as well as environmental quality reviews in New York State. Brookhaven Energy will discuss and address the following issues as part of the traffic study in the Appliction:

- Existing traffic patterns;
- Construction related traffic patterns and impacts;
- Operational traffic patterns and impacts; and
- Mitigation measures.

The methodology for assessing the potential traffic and transportation impacts will follow the instructions provided in Transportation Research Board (TRB), National Research Council, *Highway Capacity Manual*, Special Report 209, Third Edition 1994.

14.2 Existing Transportation Setting

The Project is located on the southeast corner of the Exit 66 interchange of the LIE, where Sills Road (County Route 101) intersects the LIE. It is expected that traffic access to the site will be through the intersection of Sills Road and Old Town Road, which today is already signalized, with a "T" configuration. There is already a left turn lane that serves the Project site. The Project driveway would be perpendicular to Sills Road and a direct continuation of Old Town Road intersection (which is consistent with the preliminary layout presented in Figure 2-3 above).

The LIE does not, at present, have a south service road. The New York State Department of Transportation (NYSDOT), Region 10, is undertaking the design and construction of a south service road and/or ramps both west and east of Exit 66, permitting easier access for traffic exiting the site to the east. Construction is currently planned for May 2003 through May 2004, according to NYSDOT. Until that time, Long Island Avenue is expected to be used by traffic exiting to or coming from the east. Therefore, the traffic study will assume the existing configuration.

14.3 Information Requirements and Methodology

14.3.1 Traffic

Traffic impacts are judged by comparing existing traffic levels and impacts to future/proposed traffic levels and impacts. In general, this is done by researching and/or counting existing traffic volumes at area intersections and evaluating operations at those intersections using industry standard highway capacity software.

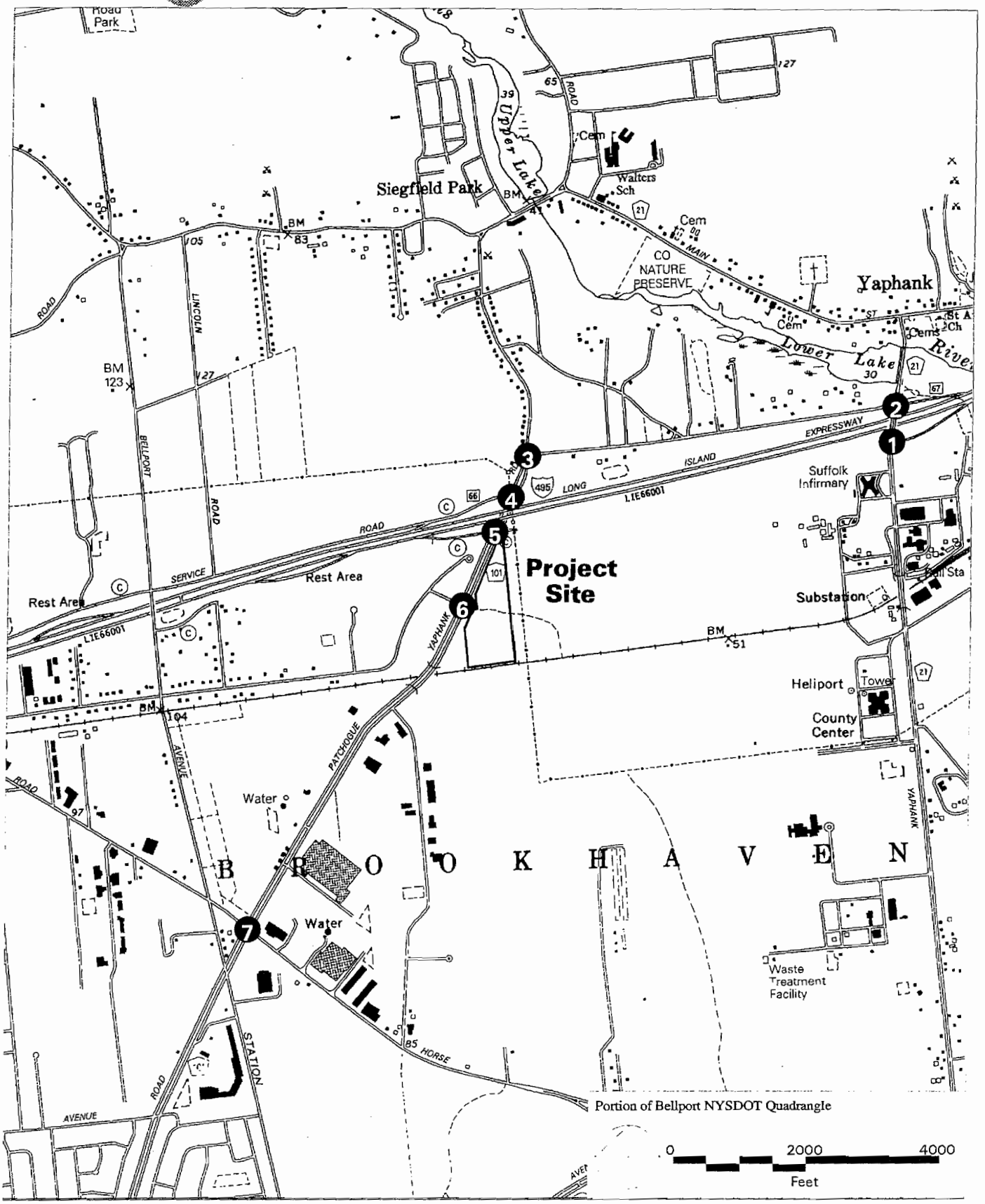
In order to complete this task, a pre-construction survey of the area will be completed. The survey will document the characteristics of the roadways in the vicinity of the Project and the regional highway system serving the study area. Roadway characteristics will include the number of approach lanes at intersections, lane widths, shoulder widths, traffic control devices and sight distance. In addition, state and local officials will be contacted to see if any recent traffic counts have been performed in the area, and to collect accident data for study area intersections, as well as local school bus routing information and schedules.

Study area intersections in the vicinity of the Project have provisionally been selected based upon field observations. The list provided here is meant to be a basis for discussion with local planning officials and other interested parties. Figure 14-1 shows the locations of the intersections proposed to be studied:

- Yaphank Avenue/LIE Exit 67 Eastbound On-Ramp; and
- Long Island Avenue/Yaphank Avenue/LIE Exit 67 Westbound Off-Ramp;
- Long Island Avenue (north of LIE)/ Sills Road;
- LIE Exit 66 Westbound On-Ramp/ Sills Road (County Route 101);
- LIE Exit 66 Eastbound Off-Ramp/Sills Road (County Route 101)
- Sills Road (County Route 101)/Old Town Road;
- Sills Road or Patchogue-Yaphank Road (County Route 101)/Horseblock Road.

If recent base traffic count data are not available (counts within the last 2 years) then new traffic counts will be completed. New traffic counts would involve peak hour turning movement counts for typical weekday morning (6:00-9:00 a.m.), weekday evening (3:00-6:00 p.m.) and Saturday midday (11:00 a.m.-1:00 p.m.) peaks at the intersections listed above (subject to agency input). In addition to manual peak hour turning movement counts, Automatic Traffic Recorder counts will be conducted for a 72-hour period (Thursday, Friday, Saturday) at the following locations:

- Sills Road (County Route 101) in the vicinity of the Project; and
- Long Island Avenue north of the LIE, between Sills Road and Yaphank Avenue.



Date: 20 Mar 00 08:52:19 Monday
/usr2/listing/traffloc.map

Figure 14 - 1
Proposed Study Intersections

The collected traffic count data will also include vehicle mix (car, truck, trailer truck, etc.) and pedestrian activity if any. Research of historic traffic count data will be undertaken in an effort to determine seasonal variation in traffic volumes within the study area.

Using the collected traffic information, base year intersection traffic networks will be constructed. These base networks will serve as the basis for which all future impacts are compared. Using highway capacity software, existing intersection levels of service (LOS) will be calculated and documented for each study area intersection.

Before the trip making characteristics of the proposed facility can be added to the roadway network, an estimate of the annual rate of traffic growth in the vicinity of the Project is necessary. The growth rate must incorporate general area growth as well as growth from planned developments in the area, excluding the projected traffic for the Project. This combined growth rate will then be added to the existing traffic networks to form the future "No-Build" networks against which the Project impacts will be compared.

Trip generation estimates will be developed for both construction and operation conditions. These will include estimates for peak trip generation during construction, and times of normal operation. Future construction and operational "Build" networks will be derived using the future No-Build traffic network base and the trip generation information for the Project. These future projected networks will be created for the year of peak construction conditions and for a future year when the Project is operating.

A comparison of projected future traffic conditions with and without the proposed Project, including calculation and comparison of the LOS for each study area intersection will be completed. The analysis will separately discuss the peak construction impacts of the Project and the typical operations of the completed Project. Based on the analysis results, an evaluation of the adequacy of the roadway system to accommodate both the construction and completed operational traffic will be made and reasonable mitigation measures, if any, will be identified.

14.3.2 Equipment Transport

Brookhaven Energy will present an investigation of the routes likely to be used to bring equipment to the site. The equipment transport plan will be a comparison of Project requirements and available infrastructure. Issues to be considered will include appropriate port facilities, the weight of components (together with weight limitations) and size of components (together with maximum clearances). The most feasible routing for oversized equipment will be presented.

14.3.3 Construction Staging Area and Roadway Design

The study will include a conceptual site plan showing all proposed laydown and construction parking areas. The driveway system on the site will also be shown, as part of the site plan. The study will also include a section discussing the design of the access drive serving the proposed facility. The design will take into account turning radii necessary to accommodate trucks and heavy vehicles as well as sight distance requirements.

14.4 Initial Impact Assessment and Mitigation

Impacts on traffic due to the Project will be assessed based on the above methodology. Mitigation measures will be considered after the analysis of the potential impacts. Mitigation may include some of the following:

- Construction shifts and large deliveries may be scheduled so that the majority of Project traffic avoids school bus travel times to the extent practical.

- Project personnel will inform town officials, Suffolk County DPW, and NYSDOT, as well as local police and fire officials, of the start date of construction. Ongoing efforts will be made to inform these officials of the progress of construction, and to respond to their concerns regarding Project-related traffic.

- Use of uniformed police officers to control traffic will be employed if deemed necessary, to address materials delivery or traffic peaks associated with construction shift changes.

15.0 TERRESTRIAL ECOLOGY

15.1 Applicability

This section addresses vegetation cover types and wildlife. Protection of terrestrial resources is achieved at both the federal and state levels of government, and is also referenced explicitly in the Siting Board regulations. The Endangered Species Act imposes prohibitions and requirements with regard to endangered or threatened species of plants and animals ("listed species") and the habitats of such species that have been designated as "critical habitat." In New York, NYSDEC has the authority to protect state-listed endangered or threatened animal species ECL §11-0535. State-listed plants are protected under ECL §9-1503. Specific to Article X, the Public Service Law requires the Siting Board to issue a Certificate only if it finds that the Project "minimizes adverse environmental impacts, considering... the interest of the state" with respect to wildlife. PSL §168.2(c)(i). Furthermore, the Siting Board regulations require an analysis of "significant ecosystem resources," including "terrestrial organisms, habitats with documented extant occurrences of rare, threatened or endangered species, forest stands or tree farms managed for timber production and active or developing sugarbushes." 16 NYCRR 1001.3(b)1(ii).

15.2 Existing Vegetation Communities and Representative Wildlife

On October 20, 1999, Earth Tech ecologists visited the Project site. During the field visit, the existing vegetative cover types on the Project site were documented. In addition, wildlife species encountered during the visit were recorded. On-site ecological communities are described below according to Reschke.[16]

15.2.1 Project Site

The approximately 21-acre site is surrounded by four transportation/utility corridors – LIE to the north, LIPA transmission lines to the east, LIRR to the south, and Sills Road to the west. The Project site is a relatively flat area dominated by a forested community of oaks and pines. Because of past cutting, the area is in the early stages of reforestation.

According to Reschke (1990), the Project site is located within the Coastal lowlands of New York State. The predominant community is a terrestrial upland forest categorized as a pitch pine-oak forest. A typical pitch pine-oak forest is a mixed forest that occurs on well-drained, sandy soils of glacial outwash plains or moraines. The dominant tree species are pitch pine (*Pinus rigida*) mixed with one or more of the following oaks: scarlet oak (*Quercus coccinea*), white oak (*Quercus alba*), red

[16] *Ecological Communities of New York State*, NYSDEC, by Carol Reschke, March 1990.

oak (*Quercus rubra*), or black oak (*Quercus velutina*). The proportions of pines and oaks vary. The shrub layer is well developed with scattered clumps of scrub oak. (*Quercus ilicifolia*) and a nearly continuous cover of low heath shrubs such as blueberries (*Vaccinium anqustifolium* or *Vaccinium pallidium*) and black huckleberry (*Gaylussacia baccata*). The herbaceous layer consists of bracken fern (*Pteridium aquilinum*), wintergreen (*Gaultheria procumbens*), and Pennsylvania sedge (*Carex pensylvania*).

The Project site is dominated by pitch pine mixed with red and white oak. The diameter at breast height (dbh) of the trees ranges from 2 to 5 inches. The understory is dominated by lowbush blueberry, Sassafras (*Sassafras albidum*), and Sweet fern (*Comptonia peregrina*). The herbaceous community is relatively sparse, but dominated by bracken fern.

The Project site does not support vegetation which would be characteristic of a sugarbush. There were little or no maple vegetation on site. The Project site is also not classified as a tree farm, nor is it managed for timber production.

Reschke also notes characteristic birds in the pitch pine-oak community. These include rufous-sided towhee (*Pipilo erythrophthalmus*), common yellowthroat (*Geothlypis triches*), field sparrow (*Spizella pusilla*), prairies warbler (*Dendroica discolor*), pine warbler (*Pendroica pinus*), blue jay (*Cyanocitta cristata*), and whip-poor-will (*Caprimulgus vociferus*).

Due to the somewhat disturbed nature of the site and the transportation corridors that isolate the site, the diversity of wildlife species expected to inhabit or utilize the site is not likely to be significant. Generally, wildlife species characteristic of upland woodland forests include white-tailed deer (*Odocoileus virginianus*), cottontail rabbit (*Sylvilagus floridanus*), gray squirrel (*Sciurus carolinensis*), red squirrel (*Tamiasciurus hudsonicus*), gray fox (*Urocyon cinereourgenteus*), raccoon (*Procyon lotor*) ring-necked pheasant (*Phasianus colchicus torquatus*), bobwhite quail (*Colinus virginianus*), woodcock (*Philohela minor*), ruffed grouse (*Bonasa umbellus*), thrush (*Hylocichla* spp.), vireo (*Vireo* spp.), and scarlet tanager (*Piranga olivacea*).

15.2.2 Protected Plant Species

Brookhaven Energy has initiated an effort to document whether there are any federal and/or state protected plant or wildlife species in the vicinity of the Project. This effort is being conducted in order to comply with the federal Endangered Species Act and state law, as described in Section 15.1 above. Brookhaven Energy has contacted the US Fish and Wildlife Service (USFWS) and the New York Natural Heritage Program within NYSDEC for information on the presence of any

documented occurrences of federal and/or state listed plant and wildlife species on the Project site.

The USFWS indicated as follows: "Except for occasional transient individuals, no federally listed or proposed endangered or threatened species under our jurisdiction are known to exist in the Project impact area." NYSDEC responded with "a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site." This report contains species and the locations where they were found. NYSDEC considers this information to be "sensitive" to avoid the protected species from being disturbed and the report may not be released to the public without permission from the New York Natural Heritage Program. However NYSDEC authorizes the identification of the species without the locational information.

Table 15-1 lists the plant species reported in the Natural Heritage Report on Rare Species and Ecological Communities. This table lists species noted in the general area of the Project site. The report from NYSDEC did not identify any species, under its jurisdiction, as having known populations on the Project site. The potential for the occurrence of the species listed below will be evaluated as part of planned survey of the Project site.

Table 15-1: NYSDEC Reported Rare Species in the Vicinity of the Project Site

Scientific Name	Common Name	New York Legal Status	Ecological Occurrence and Date Last Seen
Lechea tenuifolia	Slender Pinweed	Rare	Historic without any recent field information last sighting – 09/01/1912
Crataegus uniflora	Dwarf Hawthorn	Unprotected	Historic without any recent field information last sighting – 07/14/1907

15.2.3 Protected Wildlife Species

The site study noted in Section 15.2.2 also included endangered, threatened, or rare animal species. The USFWS indicated that there are no federally listed animal species on or in the immediate vicinity of the Project site. USFWS generally notes the potential presence of occasional transient individuals. NYSDEC, in its response, indicated one species historically noted in the general vicinity, but no occurrences on the Project site.

The wildlife species noted somewhere in the vicinity of the Project site is the Persius Dusky Wing (*Erynnis persius persius*), a butterfly/skipper. This species is listed as endangered by New York State. There was no known date of the last known occurrence of this species, although the last known sighting was considered historic.

NYSDEC has indicated that an historic occurrence would be at least 15 years before present. The potential to support Persius Dusky Wing would require host plants (i.e., Lupinus, Thermopsis, Lotus, or other legumes). Legumes generally occur in field environments, not forested area, and therefore, the site appears to be an unlikely habitat to find such plants. Nonetheless, a survey for these plant species is planned in 2000 and will be included in the Application.

15.3 Information Requirements and Methodology

A more detailed description of terrestrial ecology on the site will be undertaken during the spring and summer, to complement the existing observations that were made in autumn 1999. Terrestrial resources include vegetative communities and the wildlife species associated with these communities. The Application will provide a more comprehensive list of plant species occurring on the Project site and the relative abundance of each. A description of the acreage of impact for each of the vegetative communities will be included. Because of the somewhat uniform growth of trees on-site, an estimate of trees to be cleared can also be made from the acreage calculation. The detailed study will be undertaken for the Project site, as well as the water sewer interconnection (if and to the extent applicable), consistent with the scope outlined in Section 2.1.

Additionally, a more comprehensive listing of wildlife species associated with the vegetative communities on the Project site will be included in the Application. The characterization will include mammals, birds, amphibians and reptiles, and wildlife habitats that occur on the Project site or along the off-site interconnection routes to be studied (expected to be the water and sewer line routes). The discussion will identify and evaluate reasonable mitigation measures to be employed to minimize impacts to vegetative communities and wildlife as a result of the proposed Project.

15.4 Initial Impact Assessment and Mitigation

15.4.1 Impacts

The Project construction will disturb the pitch pine-oak forested community described above. This forested community will be removed to site two identical single shaft power islands. The cleared area will also include shop/warehouse buildings and equipment; backup fuel storage; water treatment area and storage tanks; a stormwater management system; and access roadways.

It is anticipated that most, but not all, of the 21-acre site will be disturbed. The vegetation species to be removed are the species described above – primarily pitch pine and oak tree species with approximately 2 to 5-inch diameter at breast height; understory of lowbush blueberry, sassafras and sweetfern; and bracken ferns.

There are three potential types of direct impacts to vegetation/habitat cover types as a result of construction of the Project. The first type is the permanent loss of vegetation/habitat cover type that will occur as a result of the new facilities. The second category of impact represents a temporary loss of vegetation/habitat cover type. The third category includes activities that would alter existing vegetation cover types. The Application will include analyses of those direct impacts to vegetation/ habitat cover types in more detail.

15.4.2 Anticipated Mitigation

In order to reduce the amount of permanent loss of botanical resources the Project has been located adjacent to both natural gas and electric transmission rights-of-way. Likewise, water and wastewater services are available near the site and are accessible via existing rights-of-way, thus reducing the extent of interconnect impacts. Brookhaven Energy expects to minimize its on-site impact to terrestrial resources by overlapping staging areas and eventual project footprint areas to the extent it is practical.

Best management practices will be utilized in order to prevent any adverse impacts to botanical or wildlife resources as a result of potential erosion or sedimentation during project construction. Following construction, surfaces will be appropriately graded, stabilized, vegetated, or graveled to minimize erosion and sedimentation potential. Measures will be taken to minimize the amount of fugitive dust, noise emissions, wastewater, and traffic during facility operation. On the basis of its analysis and on the basis of discussions with agencies and the public, Brookhaven Energy will identify any further reasonable mitigation measures, if warranted.

16.0 WATER RESOURCES

16.1 Introduction

Protection of water is a cornerstone of environmental protection and is an especially important issue on Long Island. For this reason, Brookhaven Energy proposes to use air-cooling technology, in order to greatly minimize its water use, as compared to other cooling technologies. Within the Article X process, the Siting Board findings will rely on a demonstration of a Project's adequate water supply, wastewater, and water quality protection strategies.

Brookhaven Energy's water-related analysis in this scoping statement includes the following five discrete subsections:

- The quantity and quality of water being used (addressed in Section 16.2: Water Supply),
- The protection of the underground aquifer, which in the case of Long Island is also the sole source of potable water (addressed in Section 16.3: Aquifer Protection);
- The generation and treatment of wastewater (addressed in Section 16.4);
- Stormwater management and the prevention of erosion and sedimentation (addressed in Section 16.5); and
- The quality and protection of surface water, wetlands and aquatic ecology (addressed in Section 16.6).

16.2 Water Supply

With air cooling, Brookhaven Energy will minimize its water use needs to an average of approximately 29,400 gpd under normal baseload operating conditions. This represents a 99 percent reduction compared to the water needs of a similar-size plant using an evaporative cooling tower. The source of water will be the Suffolk County Water Authority, which supplies most of Suffolk County. Locally, the Authority operates a 4-mgd well field, and has a water tower and associated infrastructure. There is a 16-inch water line under the old Patchogue-Yaphank Road, with a likely interconnection route to serve the Project under Old Town Road. See Figure 16-1 for a map of local water infrastructure.

16.2.1 Water Use on Long Island

Data collected by the United States Geological Survey[17] show that an average of about 1.6 billion gallons per day of precipitation fall on Long Island. An estimated 770 mgd recharges the groundwater, while the remainder transpires, evaporates or becomes surface water runoff. Precipitation accounts for all the groundwater recharge. Groundwater flow through the surficial aquifer (Upper Glacial) is very rapid – estimated during one study period (March-April 1984) to be 270 feet per day. Flow through the deeper aquifers (the largest are the Magothy and the deeper Lloyd Aquifer) is much slower. In all, the USGS estimates that about 320 mgd of groundwater (out of 770 mgd) recharges streams, such as the Peconic and Carmans rivers.

Estimates from various studies, reported through SUNY-Stony Brook, are that losses to the aquifer system during the 1980s on the island were 489 mgd, of which 81 mgd resulted not from withdrawal but from increased development that prevented groundwater infiltration and recharge. Because much of the water (especially in Kings, Queens, and Nassau Counties) is then pumped to large wastewater treatment plants, 240 mgd of losses occurred, while 249 mgd was recharged to the aquifer system. Estimates for water consumption from the late 1990s put Nassau County consumptive use at 180 mgd, while Suffolk's is 95 mgd.[18]

All fresh groundwater in New York State, including Long Island, is classified as "GA" water, meaning that the quality of the water in the aquifer is sufficiently pure to permit it to be treated to potable standards.

16.2.2 Regulation of Water Use

Special scrutiny for water withdrawals on Long Island dates back to the early 1930s, and is embodied in New York State legislation (ECL §15-1527). This legislation recognized Long Island's position as an area that experienced intense development pressures while relying solely on the groundwater beneath it for supply. Long before many other federal and state water management initiatives, well drillers on Long Island had to apply for a Long Island well permit. Today, one of the conditions of that permit are that any new wells rated at more than 45 gpm are treated as public

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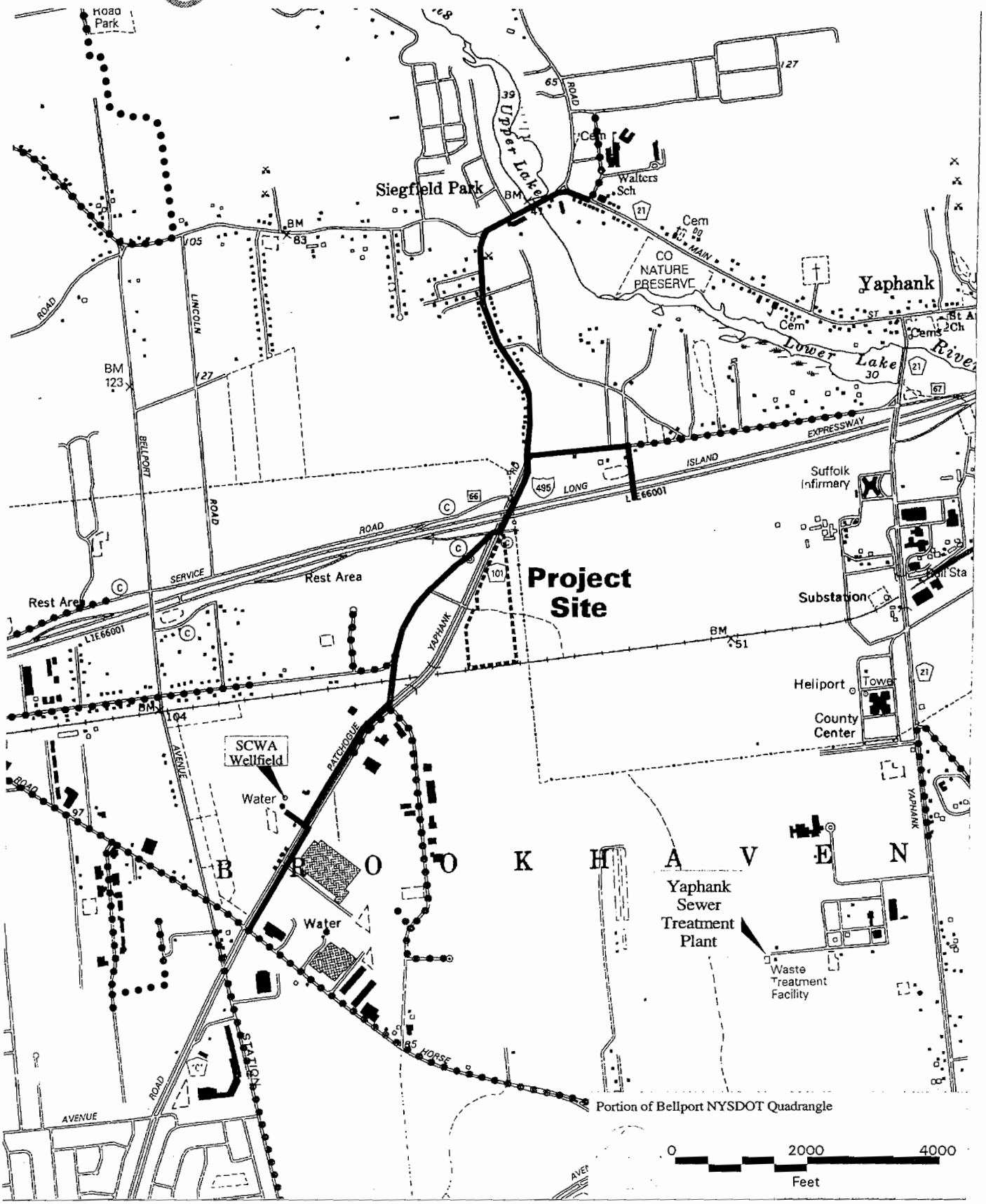
17 United States Geological Survey, *Ground Water Atlas of the United States* (Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, Vermont), HA 730-M; also on web site http://www.ceie.sunysb.edu/longis/water.html.

18 "Hydrogeologic Framework of Long Island," summary of several primary sources, available on Internet as of 10/20/99 (http://seism1.ess.sunysb.edu/~wong/hydro/LIGr/LIGr.htm); based in part on Buxton and Modica, "Patterns and Rates of Groundwater Flow on Long Island, New York", *Ground Water*, 30, 857-866, 1992.



Date:17 Mar 00 18:39:08 Friday
/usr2/listing/waterline.map

Source: Suffolk County Water Authority
Distribution System Map

Figure 16 - 1
Local Water and Wastewater Facilities

water supplies. In addition, Article 4 of the Suffolk County Sanitary Code prohibits construction of a new well where public water supply is available (§760-408.B). Another requirement of Article 4 is that cross-connections be controlled with backflow preventers or the latest available technology, to prevent mixing of wastewater and potable water.

In addition to Long Island's specific water supply requirements, groundwater supply in New York State is regulated both by NYSDEC and NYSDOH. NYSDEC's role is based on ECL Article 15 and its implementing regulations (6 NYCRR 601). NYSDOH's role is based on Article 11 of the Public Health Law and its implementing regulations (10 NYCRR, the State Sanitary Code). Generally, all of these statutes and regulations primarily address public health and the protection of water quality for potable supplies. Under PSL §164.1(a), an Article X applicant must also present information on available water supplies, as part of the overall description of the Project's water program.

16.2.3 Water Demand and Supply

By using an air-cooled condenser, the Project would require an average of only about 29,400 gpd during normal baseload conditions, including the water needed for makeup to the steam cycle. When steam injection is used, the water needs would rise by an additional 36,000 gph. During backup fuel oil firing, there would be an increase in demand above the baseline by approximately 37,500 gph. (All estimates preliminary.) Steam injection and backup oil use would not occur simultaneously.

The Suffolk County Water Authority's Patchogue/Yaphank well field is located on the westside of Sills Road, approximately 0.6 miles from the Project site. Because of the proximity to the water tower, it is reasonable to assume that this portion of the system will supply all of the Project's demand. Based on discussions with the Suffolk County Water Authority, the authorized pumping rate for each of the two wells is 1,400 gallons per minute (gpm), or an effective withdrawal of 2 mgd per well, and 4 mgd in all. In 1999, the Authority withdrew from this well field a total of 517.3 million gallons, or an average of approximately 1.4 mgd. During the peak day (June 28, 1999), 3.97 mgd were withdrawn at the well field. Thus, the Project's baseline demand would constitute an increase of only 2 percent at the well field. In a broader context, the Authority's system has over 400 active wells, and can store more than 60 million gallons. The Project's withdrawal would constitute a minimal increase for the Authority's system.

16.2.4 Information Requirements and Methodology

In the Application, Brookhaven Energy will present a detailed estimate of the hourly and daily peak and the hourly and daily average water supply needs and consumptive water losses of the Project. The water balance will be further broken down by

water/steam cycle and domestic uses. Furthermore, Brookhaven Energy expects to soon file an official request with the Suffolk County Water Authority for a letter of water availability. Based in part on preliminary discussions with the Authority, Brookhaven Energy currently anticipates that baseline demand will present no capacity issue whatsoever. The demand for steam injection during hot weather months (peak demand) can be met by use of on-site storage that can be filled during off-peak hours, in order to ensure that daytime peak water demands of other users can be accommodated. However, based on preliminary discussions, Brookhaven Energy anticipates that such an arrangement may not be necessary.

The Application will contain a groundwater study that will characterize the groundwater under the Project site. It will include a map of the site showing the water table depth and its seasonal variation. Brookhaven Energy will also obtain from Suffolk County Water Authority, NYSDOH, and/or Suffolk County DHS, or other publicly available sources, data regarding likely well locations within 1 mile of the site and any associated zone-of-contribution data that may be available.

16.2.5 Drought Management

The Project site is well outside the water budget areas of eastern Long Island. Restrictions due to drought, such as water bans, are rare events for the Suffolk County Water Authority system in this area.[19] Nonetheless, the Project will not seek exemption from the restrictions that other industries are required to follow during drought periods. If limited water budgets during extreme drought periods should prove to limit the Project's ability to use steam injection for power augmentation, Brookhaven Energy will not use steam injection for that period. At the same time, Brookhaven Energy's raw and demineralized water storage tanks will be designed to hold a sufficient amount of water to ensure baseline operation during drought periods. As part of the groundwater study, Brookhaven Energy will analyze past water availability records, and will estimate Project impacts under drought conditions.

16.2.6 Initial Impact Assessment and Mitigation

The Project's water use is not anticipated to adversely impact the Suffolk County Water Authority System. By drastically reducing water demand by adopting air cooling, the Project's baseline needs can be comfortably met by the existing water supply system. At two similar projects in Massachusetts (see Section 1.4.1), ANP has developed innovative ways to augment local supplies by implementing water conservation programs. On Long Island, a primary goal of public officials has been

[19] Drought emergency declared once in approximately the last 25 years, according to preliminary informal conversations with Suffolk County Water Authority official.

to preserve the rate of groundwater recharge and to preserve the lands necessary to do so. Brookhaven Energy therefore anticipates minimizing paved areas within the site, and to restoring as much of the site as possible to a condition that permits direct recharge from precipitation.

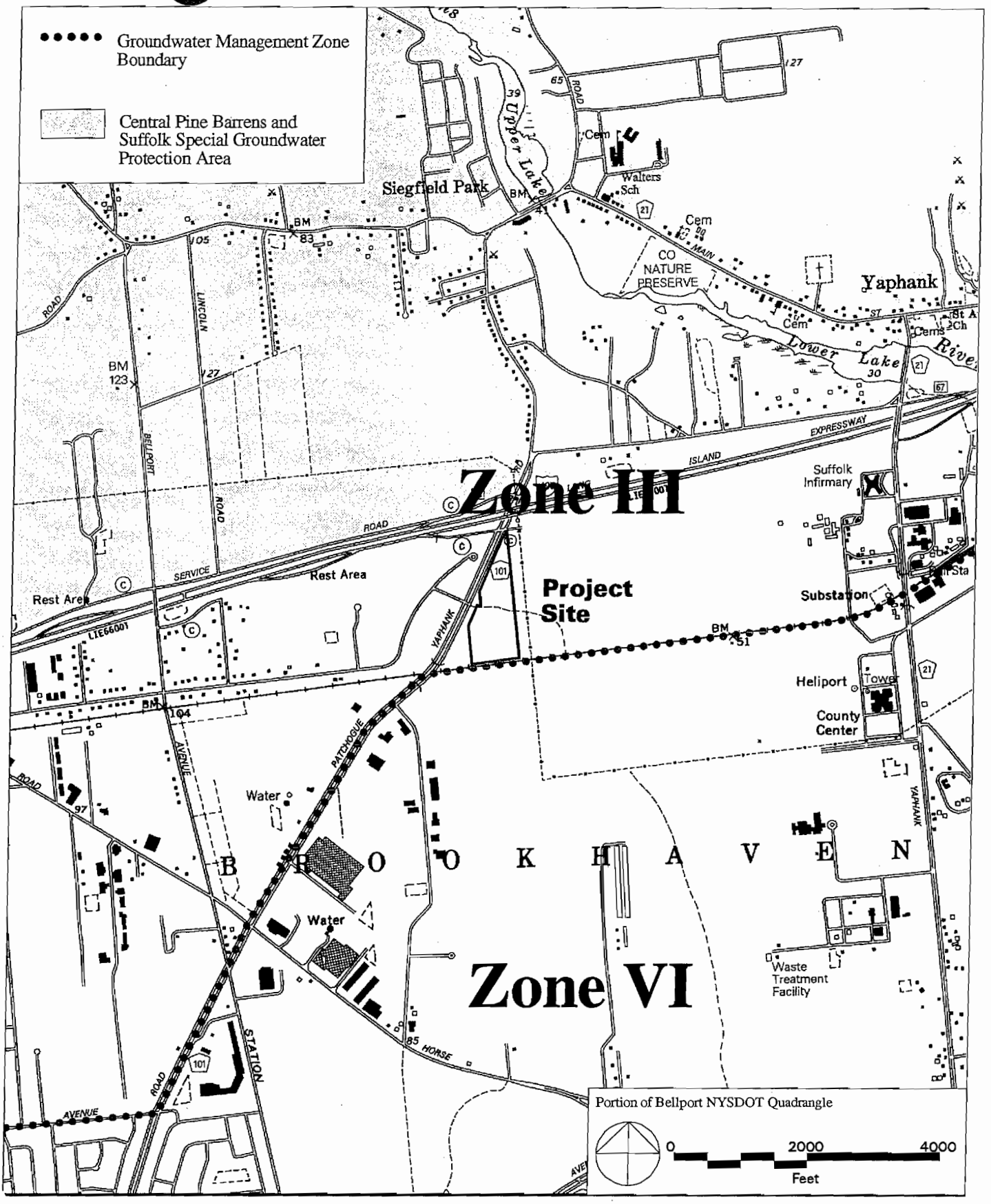
16.3 Aquifer Protection

Long Island's groundwater is protected on the federal, state, county, and municipal level. Brookhaven Energy has analyzed the different types of requirements, consulted with officials at NYSDEC, Suffolk County Department of Health Services (DHS), and town of Brookhaven, and will carefully design the Project to ensure that groundwater resources are protected. The different regulations are summarized below.

16.3.1 Regulatory Applicability

The Federal Safe Drinking Water Act of 1974 (42 USC 300h-3.e) established a program to designate sole source aquifers – zones where groundwater underlying inhabited areas serve as the only source of water supply, such that a contamination of the groundwater would lead to potentially major hazards to human health. Long Island, and thus the Project site, is coterminous with the EPA-designated Nassau-Suffolk and King-Queens Sole Source Aquifers.

New York State has acted in several ways to restrict certain activities within the aquifer that have the potential to contaminate groundwater. ECL §15-0514 identifies "primary groundwater recharge areas," which are based on the Long Island Comprehensive Waste Treatment Management Plan of 1978 (developed pursuant to Section 208 of the Clean Water Act and commonly referred to as the "208 Plan"), which identified the areas within Long Island where precipitation is able to recharge the deeper aquifers – "Deep Recharge Areas." These zones are within the interior of the island. See Figure 16-2, *Groundwater Protection Areas* (note that Zone III is classified as a Deep Recharge Area, while Zone VI is not). Also, pursuant to ECL Article 55, Special Groundwater Protection Areas (SGPAs) were defined. The nearest SGPA is on the north side of the LIE, coterminous with the Central Pine Barrens (also shown in Figure 16-2).



Source: Suffolk County Dept. of Heath Services
Environmental Conservation Law Article 57.

Figure 16 - 2
Groundwater Protection Areas

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Article 7 of the Suffolk County Sanitary Code protects both Deep Recharge Areas and other areas proximate to water supplies – "Water Supply Sensitive Areas." The latter are protected as though they were deep recharge areas for 1,500 feet upgradient and 500 feet downgradient of the well. The Project site is within a Deep Recharge Area, but the parcels south of the LIRR are outside the Deep Recharge Area. The nearest water supply sensitive area is well over 1,500 feet south of the Project site.[20]

Article 7 prohibits the storage of "restricted toxic or hazardous materials," unless a permit has been obtained. For Article X projects, it is assumed that the Article 7 permitting process is incorporated into the Siting Board's review of the Article X Application. Brookhaven Energy has met with the Suffolk County DHS regarding its Article 7 regulations and will work to ensure groundwater protection at the Project site. Brookhaven Energy's understanding is that storage, under Article 7, does not include emergency generator or fire pump fuel, or oils that are being used in equipment, such as transformer oil or turbine lube oil, but does include spare oil supplies. While Article 7 regulates storage and, therefore, does not apply to the construction period, Brookhaven Energy's pollution prevention plan for construction will include measures to protect groundwater. Bulk storage of backup fuel oil, furthermore, would require registration with NYSDEC under state law. NYSDEC requires registration of all petroleum storage facilities in excess of 400,000 gallons.

Article 12 of the Suffolk County Sanitary Code is a design-based regulation, whose purpose is to ensure the safe storage and handling of all toxic and hazardous materials. It requires secondary containment of 110 percent of the maximum capacity, automatic overfill detection and alarms, cathodic protection, and other design features. The regulation also covers oil and chemical transfer procedures. An Article 12 plan review will be required of the Project. Article 12 also requires registration for chemical and oil tanks, including any chemical tank above 80 gallons, any petroleum tank above 1,100 gallons, and storage areas holding five or more 55-gallon drums.

16.3.2 Project Storage Program

Project operation will require limited amounts of lubricating oils and certain other industrial chemicals, which will be stored in specially designed, covered containment areas. Under Article 7, the proposed Project's building footprint determines the allowed storage of oils and other regulated materials. The Project will also require chemicals for boiler feedwater treatment and Selective Catalytic Reduction for control of NO_x. These, however, are not regulated under Article 7. Summaries of

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20 Pursuant to the 1996 amendments to the Safe Drinking Water Act, the New York State Department of Health (NYSDOH), in coordination with the Suffolk County Department of Health Services, will be conducting source water assessments, delineating the contribution areas of specific wells.

typical chemical usage, quantity, and storage methods during construction and operation will be provided in the Application.

All chemical storage areas on site will be situated indoors with appropriate containment. Containment will be accomplished through the installation of curbs and drains. Following observation of any spilled material, clean-up and off-site disposal to an appropriate location will be implemented. Both during construction and operation, the potential for spills will be minimized, and adverse impacts mitigated, through proper design, containment systems, and implementation of a spill prevention and contingency plan. Backup fuel oil will be stored in tanks in an aboveground containment area consisting of dikes and/or walls capable of containing at least 110 percent of the tanks' capacity. The curbs and dikes will be appropriately lined to accommodate fuel oil. The transfer of fuel oil from delivery trucks will occur within a containment area. Any spillage in the unloading area will run into a local sump. In the unlikely event of a significant release of fuel oil, spilled liquid would be retained within the concrete containment area and would not affect the aquifer. The containment plans will be developed within a time frame that allows for review by the appropriate agencies, including those cited above.

16.3.3 Information Requirements and Methodology

The groundwater study to be provided in the Application is described in Section 16.2.4. This study will also include a characterization of groundwater quality at the site. Brookhaven Energy will protect groundwater quality by double containment and other measures mandated by state and county law (especially Article 12 of the Suffolk County Sanitary Code). Brookhaven Energy will also protect groundwater quality in its wastewater program, described in Section 16.4.

16.4 Wastewater

Brookhaven Energy will minimize its wastewater discharge requirements, since no cooling tower blowdown will be generated. Wastewater flows are expected to be about 21,000 gpd on average during normal baseload operation. The wastewater will be sent to the Yaphank Sewer Treatment Plant, which discharges to groundwater.

16.4.1 Regulatory Applicability

One of the primary purposes of the federal Clean Water Act is to control and eliminate the discharge of pollutants into surface water through a system of end-of-pipe controls. This has been implemented through the National Pollutant Discharge Elimination System (NPDES) program. New York State has itself passed similar provisions under ECL Article 17, and NYSDEC has been delegated authority by EPA to implement the NPDES program. However, the state version of the

program (SPDES) is more expansive than its federal counterpart in that it includes discharges to groundwater.

NYSDEC has promulgated regulations (6 NYCRR 703.6) limiting pollutants in effluent discharged to groundwater. Brookhaven Energy does not currently anticipate needing to obtain a permit for a process water discharge to groundwater. If any discharges cannot be accepted by the Yaphank STP, a SPDES permit would be required as part of the Article X process. The Public Service Law requires the Siting Board to issue a Certificate only if it finds that the Project "will not discharge any effluent that will be in contravention of [state water quality] standards." PSL §168.2(c)(iii).

For new electric generating projects that discharge water into municipal sewer systems, the federal government has adopted the so-called "pretreatment standards for new sources" (PSNS) under 40 CFR 423. The pretreatment standards are meant to ensure that the quality of effluent from an industrial source is sufficient to allow it to be treated in a publicly owned treatment works (POTW). This includes limitations on chlorine, oil and grease, suspended solids, iron, copper, and the groups of so-called priority pollutants, which are volatile and semi-volatile organics as well as specific metals. For most pollutants, the limits are defined as below instrument detection level.

Suffolk County has established sewer use limits for several types of pollutants, including specific metals, toxic organics, and other parameters, as shown in Table 16-1. These sewer discharge concentration limits are generally applicable to new wastewater discharges in Suffolk County, and would form a basis for Project-specific pretreatment requirements.

16.4.2 Existing Wastewater Infrastructure

Sewer service will need to be extended to the Project site. The new sewer connection would probably be to the existing Yaphank Road interceptor at Exit 67, a distance of 1.5 miles. The sewer line will have minimal impacts, because the potential routes it could follow are already disturbed or developed transmission or transportation corridors.

The sewer connection would enable Brookhaven Energy to discharge all of its process and sanitary flows to the Yaphank Sewer Treatment Plant, located at the southwest end of the Suffolk County facilities complex, southeast of the Project site (see Fig. 16-1 above). In order that a connection to this plant's system be made, the Suffolk County Sewer Agency must approve it as a district. That approval is currently being finalized and is expected to be in place well before Project construction.

Table 16-1: Suffolk County Sewer Discharge Concentration Limits)

Parameter	Daily Average (mg/l)	30-day Average (mg/l)
pH	<12.5; > 5.0	
Acetone	50.0	50.0
Arsenic	0.4	0.2
Available Chlorine	100	50
Barium	8.0	4.0
Cadmium	0.8	0.4
Chromium, Hexavalent	0.4	0.2
Chromium, Total	8.0	4.0
Copper	1.6	0.8
Cyanide, Total	3.2	1.6
Cyanide, Amenable	0.8	0.4
Fluorides (to fresh water)	8.0	4.0
Gold	0.4	0.2
Lead	0.4	0.2
Manganese	8.0	4.0
Mercury	0.4	0.2
Nickel	8.0	4.0
Phenol	1.5	1.5
Selenium	0.4	0.2
Silver	0.4	0.2
Sulfide	12.0	6.0
Zinc	5.0	2.5
Petroleum Hydrocarbons	50	50
Total Toxic Organics	10.0	
BOD	300	300
Chlorine Demand	25	25
Suspended Solids	300	300

According to EPA's Permit Compliance System database and Suffolk DPW personnel, the Yaphank STP (NPDES ID NY0085693) has a design capacity of 250,000 gpd. Current flows are 110,000 gpd, as shown in Table 16-2. Brookhaven Energy has commenced conversations with the Suffolk DPW regarding pretreatment requirements for a discharge to the treatment plant. Brookhaven Energy will soon be undertaking an extensive water sampling program of Suffolk County Water Authority in order to determine chemistry requirements and limits for both water use and wastewater discharge. (Note that the limits listed in Table 16-2 are effluent limits for the treatment plant, not pretreatment limits for sewer users.)

Table 16-2: Yaphank Treatment Plant, Permit Limits & Effluent Characteristics (1997-1999)

Parameter	Discharge Limit	3-year Peak
pH, standard units	6.5 – 8.5	6.4-8.5
Temperature, degrees Centigrade		27
Flow, average limit, mgd	0.25	.16
Total Dissolved Solids, mg/l		356
Total Nitrogen (as N), mg/l	10	32.4
Influent Nitrogen (as N), mg/l		83
Dissolved Chloroform, mg/l	0.1	0.02
Total Silver (as Ag), lbs/day	0.1	
Total Cyanide (as CN), mg/l	0.04	
Total Nickel (as Ni), mg/l	2.0	
Methylene Chloride, mg/l	0.05	0.004
Phenols, mg/l	0.002	0.041

Source: EPA's Permit Compliance System database, http://www.epa.gov/enviro/html/pcs/pcs_overview.html.

16.4.3 Information Requirements and Methodology

In the Application, Brookhaven Energy will present water balance diagrams showing the types of process, plant, and sanitary uses that produce each wastewater flow. The description will include an estimate of hourly and daily peak and average volumes and effluent characteristics. These will be compared to applicable standards, as discussed in Section 16.4.1. Brookhaven Energy does not propose the construction of a septic system, since its primary purposes – pollution control and groundwater recharge – can just as adequately be achieved by the Yaphank STP.

On the basis of ongoing discussions with NYSDOT, Suffolk County DPW, and affected right-of-way owners, if any, Brookhaven Energy will present in the Application a conceptual plan of the wastewater connection to the Yaphank STP. It will include documentation of available capacity limitations and water quality limitations on the Project's wastewater discharge. Brookhaven Energy will also present copies of possible future agreements with the Suffolk DPW or an update on the status of negotiations. If a discharge to groundwater requiring a SPDES Permit should become part of the Project, Brookhaven Energy would then include a SPDES Permit application. However, under the proposed design, the Project will not require a wastewater-related SPDES permit, because wastewater will be discharged to a sewer system. (Stormwater SPDES permit is addressed below.)

16.4.4 Initial Impact Assessment and Mitigation

Brookhaven Energy expects that it will have a modest or negligible impact on the available wastewater treatment system. Only minimal streams of plant drains, boiler blowdown, and miscellaneous sanitary streams will need to be disposed, totaling about 21,000 gpd on average for normal baseload operation. By minimizing its wastewater treatment flows, Brookhaven Energy will be using only a small fraction of the Yaphank STP's capacity. Brookhaven Energy will work with Yaphank STP to ensure that its pretreatment requirements are met, and will make necessary design adjustments as determined jointly by Brookhaven Energy and the Suffolk County DPW.

16.5 Stormwater Management

16.5.1 Regulatory Requirements

In addition to regulating the discharge of end-of-pipe ("point source") pollutants, the NPDES program regulates non-point source pollutants, which can be caused by erosion and subsequent sedimentation in water. NYSDEC also has a non-point source program under SPDES. For the Project, there are two types of activities requiring SPDES stormwater general permits – the construction phase and the operation phase. For construction, the Project is required to submit a Notice of Intent for coverage under the Construction Stormwater General Permit. The Project, as well as interconnects causing a disturbance of 5 acres or more, will be required to submit a Notice of Intent and comply with the terms of the permit, including preparing and implementing a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP also addresses measures to be taken to prevent, control and respond to on-site spills. Because combined-cycle power plants fit the classification of steam/electric plants, the Project may also seek an operation-phase stormwater permit coverage under the Multi-Sector Permit for Industrial Stormwater Activity. However, based on initial conversations with NYSDEC Region One staff, Brookhaven Energy anticipates filing for an individual SPDES permit because of backup fuel oil storage on-site. In that case, Brookhaven Energy would apply for the SPDES permit as part of the Article X process, and probably would not need to seek stormwater general permit coverage for the operations period.

16.5.2 Existing Conditions

The Project site is undeveloped and consists almost entirely of tree cover. The site is undulating and without steep slopes. Lower elevations are located toward the south of the site. As documented in Section 10.2, "Soils Analysis", surface and subsurface soils are moderately to highly permeable, and the site is well drained. No surface water bodies are present on or adjacent to the site.

16.5.3 Information Requirements and Methodology

Development of the site will involve re-grading, construction of buildings and other structures, re-surfacing, and landscaping. These improvements will alter the site's stormwater runoff characteristics. The Application will include a stormwater management plan that addresses the changes in runoff quantity and quality and discusses mitigation of potential environmental impacts. There will be a conversion of some area that is presently unimproved to an impervious condition. Water that comes into contact with impervious surfaces, however, can still infiltrate the groundwater and can be cleared of any sediments or contaminants through the use of so-called "best management practices" (BMPs). The purpose of BMPs is to closely approximate pre-development conditions. BMPs can include physical construction features such as detention ponds and infiltration swales, as well as operational and maintenance procedures.

The stormwater management plan will consist of an engineering report, design plans, and technical specifications for an efficient stormwater drainage system. The volume and rate of stormwater runoff under both pre-construction and post-construction conditions will be used to quantify the potential impacts of construction on these parameters and develop suitable mitigation measures. The stormwater management plan will be based on current watershed drainage area, soil type and hydrologic soil group, and annual rainfall data. It will estimate the rate and re-distribution of groundwater recharge. Then, the pre-development and post-development stormwater runoff volume and discharge rates for various 24-hour storm events will be calculated. If post-development discharge rate is greater than the pre-development rate, engineered attenuation measures will be considered and proposed. The appropriate BMPs will be described in detail. The stormwater management system will also make use of NYSDEC's guidance document, *Reducing the Impacts of Stormwater Runoff from New Development.* Stormwater management plans are also typically governed by local administration, as part of traditional site plan review or similar procedure. For the Project, the stormwater management system will be designed and operated in accordance with NYSDOT, Suffolk County and town of Brookhaven guidance.

16.5.4 Initial Impact Assessment and Mitigation

During construction, increased soil erosion can temporarily increase suspended solids in surface water runoff and increase sediment deposition. For this reason erosion controls and drainage system maintenance will be performed as recommended in the *New York Guidelines for Urban Erosion and Sediment Control* manual. It is anticipated that stormwater recharge will occur on-site. There is the potential for increased amounts of dissolved and undissolved constituents in stormwater that may have potential impacts on groundwater quality. By following BMPs, the impacts will be minimized, consistent with the purpose of the SPDES

program. In addition, Brookhaven Energy will request that the appropriate officials of NYSDEC, Suffolk County, and Brookhaven review the stormwater management plan to ensure that all potential impacts are identified and adequately mitigated, and the stormwater management system is designed in conformance with the adopted regional and local standards.

16.6 Surface Waters, Wetlands, and Aquatic Ecology

The Project will not impact any surface water or wetlands, and it is anticipated that the water and sewer lines also will not impact surface water or wetlands. The following discussion is intended to provide background as to the regulations that may be applicable in the event that off-site facilities to be studied in the Application (see Section 2.1) should cross surface waters or wetlands, which is not anticipated. Also, the nearest surface water and wetland protection areas are described.

16.6.1 Regulatory Applicability

Federal and state legislation is concerned with the protection of water during stream disturbance or activities that can result in dredging or filling. By extension, this protection has been accorded not only to navigable waters of the United States, but also to their non-navigable upper reaches and to wetland areas, which play a role in the ecological and hydrological systems of any watershed.

Section 404 of the federal Clean Water Act requires that permits be obtained from the US Army Corps of Engineers (ACOE) for any dredge and fill activities in waters of the United States, including freshwater wetlands. 33 USC §1344(e). The ACOE established Nationwide general permits authorizing a variety of activities in wetlands and waterways, subject to specific conditions, including filling up to 1 acre of wetlands. Section 10 of the Rivers and Harbor Act requires the ACOE to issue permits authorizing the obstruction or alteration of navigable waters of the United States.

Under Section 401 of the Clean Water Act, a Water Quality Certification from the state is required prior to the issuance of any federal permit that results in a discharge to surface water, which can include a programmatic general permit, nationwide permit, or individual permit from the ACOE authorizing activities which may result in a discharge into waters of the United States. 33 USC §1341. The Water Quality Certification is a determination that the discharge will not cause violations of the New York Water Quality standards for the receiving water.

ECL Article 15 requires a permit to "modify or disturb the course, channel or bed of any stream" with a water quality classification of C or higher. Other requirements of Article 15 are a permit to construct any dam or impoundment or to "excavate or place fill below the mean high water level." This legislation is implemented by

NYSDEC and regulated under 6 NYCRR 608. Generally, stream disturbance would only apply to cases in which a linear project is constructed across smaller streams.

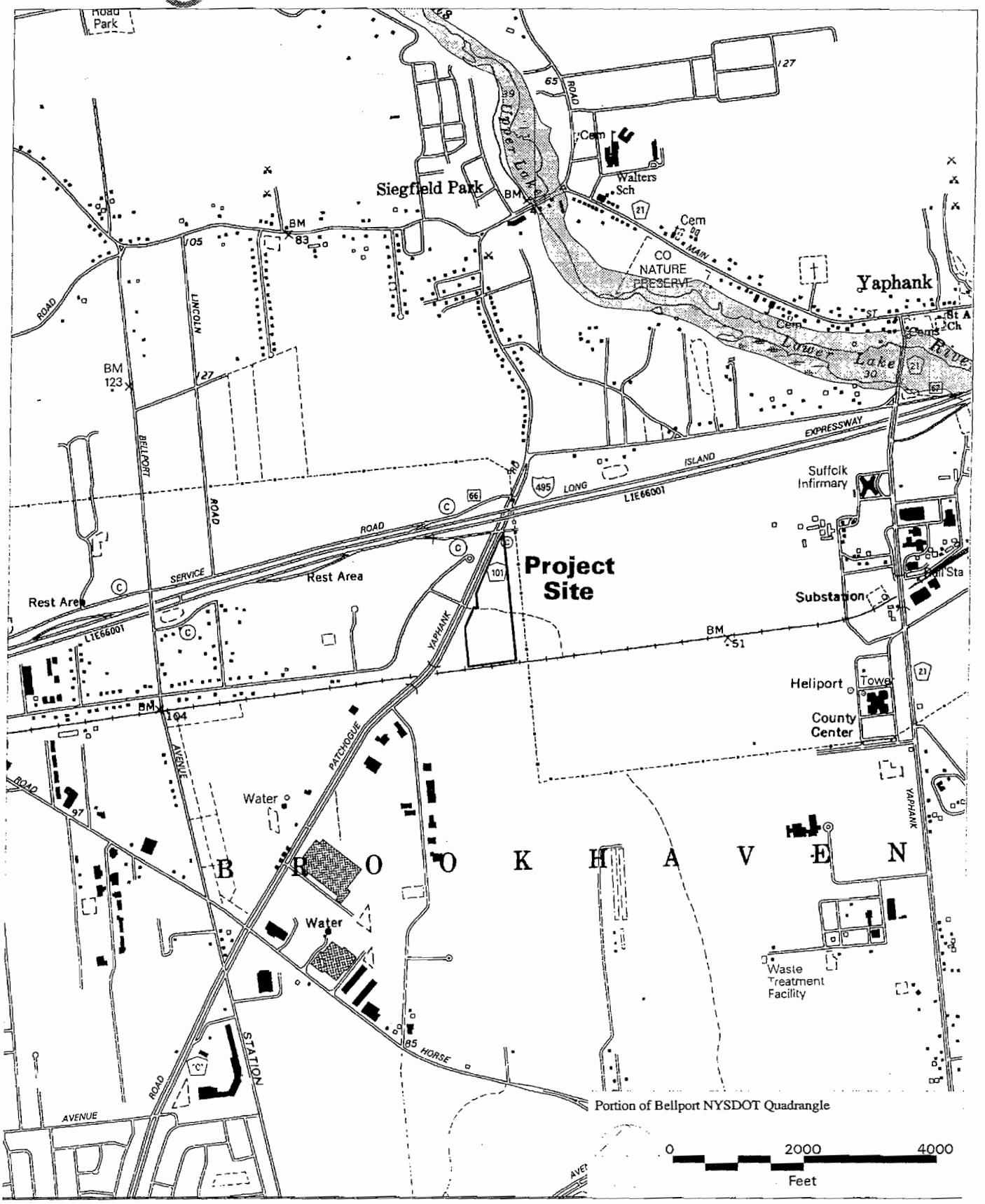
ECL Article 24 (also referred to as the Freshwater Wetlands Act) and its implementing regulations (6 NYCRR 662-664) address activities in and around state-jurisdictional wetlands. Work in wetlands or their 100-foot buffer zone must only be conducted in accordance with the stipulations of a freshwater wetlands permit issued by NYSDEC, or (in cases of Article X projects) by the Siting Board. Specific to Article X, the Siting Board regulations require an analysis of "significant ecosystem resources," including "wetlands, flood plains, streams." 16 NYCCR 1001.3(b)1(ii).

16.6.2 Project Impacts and Mitigation

The Project and its water and wastewater interconnections are not expected to cause any discharge of pollutants or sediment into any surface water or its associated floodplain, including the nearest surface water stream, the Carmans River. The Carmans River flows through the village area of Yaphank, within a mile of the Project site at the nearest point. USGS maps show no intermittent or perennial stream located closer to the Project site than the Carmans River. Figure 16-3 shows the nearest floodplain area, based on Federal Emergency Management Agency (FEMA) mapping. Based on field reconnaissance in fall 1999, there are also no wetlands on the site, either under the federal definition of wetlands (using the 1987 US Army Corps of Engineers Manual) or under the state definition. Figure 16-4 shows the National Wetlands Inventory wetlands and mapped NYS Freshwater Wetlands nearest to the Project site. Figure 16-5 shows the nearest Wild, Scenic, and Recreational (WSR) river zone (an area around the Carmans River). Since no surface waters, WSR zones, floodplain areas, or wetlands will be impacted by the Project and the off-site interconnections to be studied (expected to be the water and sewer lines), no mitigation measures are currently expected.

16.6.3 Information Requirements and Methodology

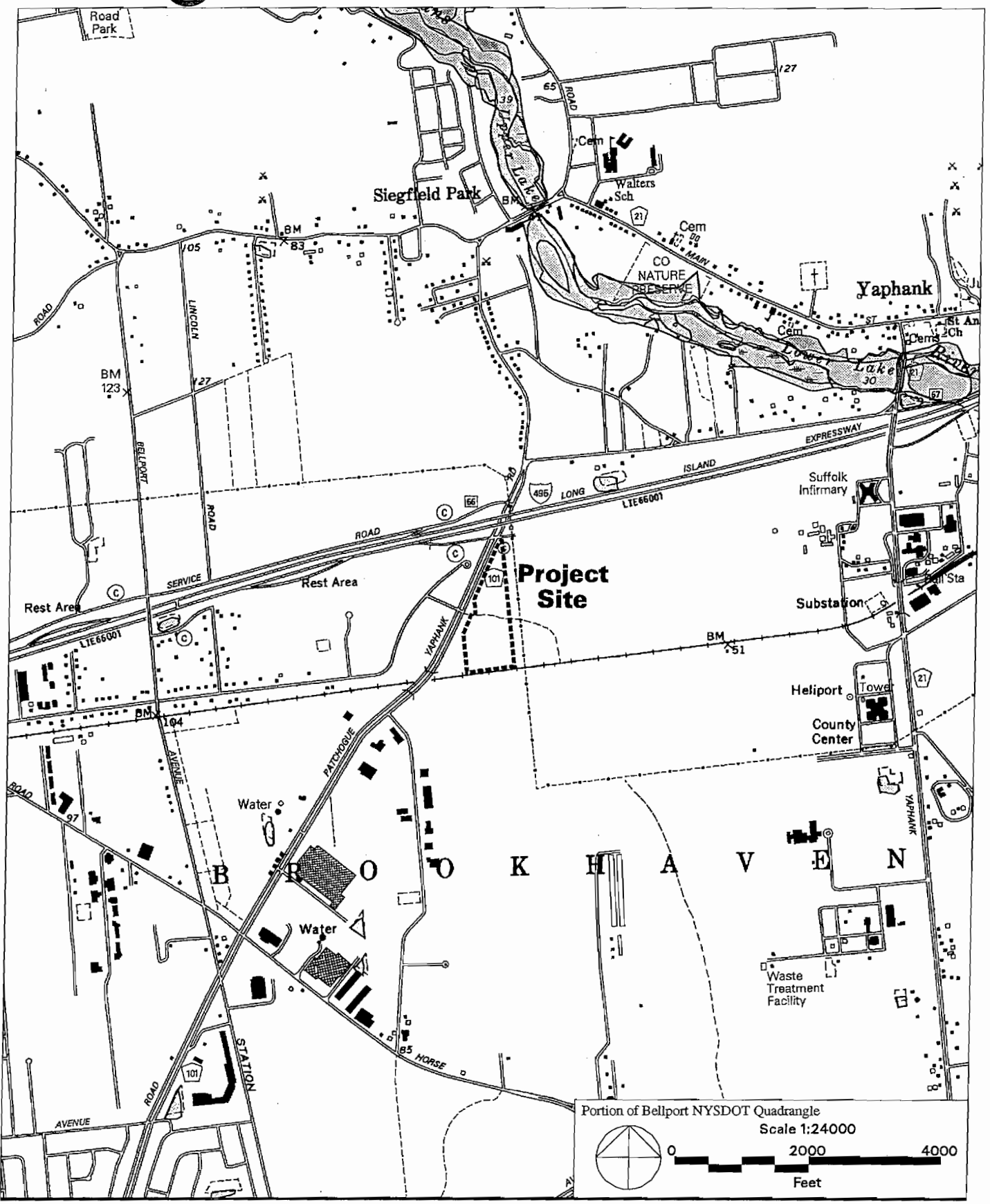
A field reconnaissance and walkover is proposed for the water and sewer lines routes. A more detailed impact assessment or mitigation proposal will be included in the Application. Studies and impact assessments will be conducted consistent with the proposed scope in Section 2.1. Detailed mapping of any wetland or waterbody impact areas will be provided, although no such impact is currently expected.



Date: 20 Mar 00 16:59:51 Monday
/usr2/lisiting/fema.map

Source FEMA Q3 Digital Floodplain Data

Figure 16 - 3
FEMA Flood Zones Near Project Site



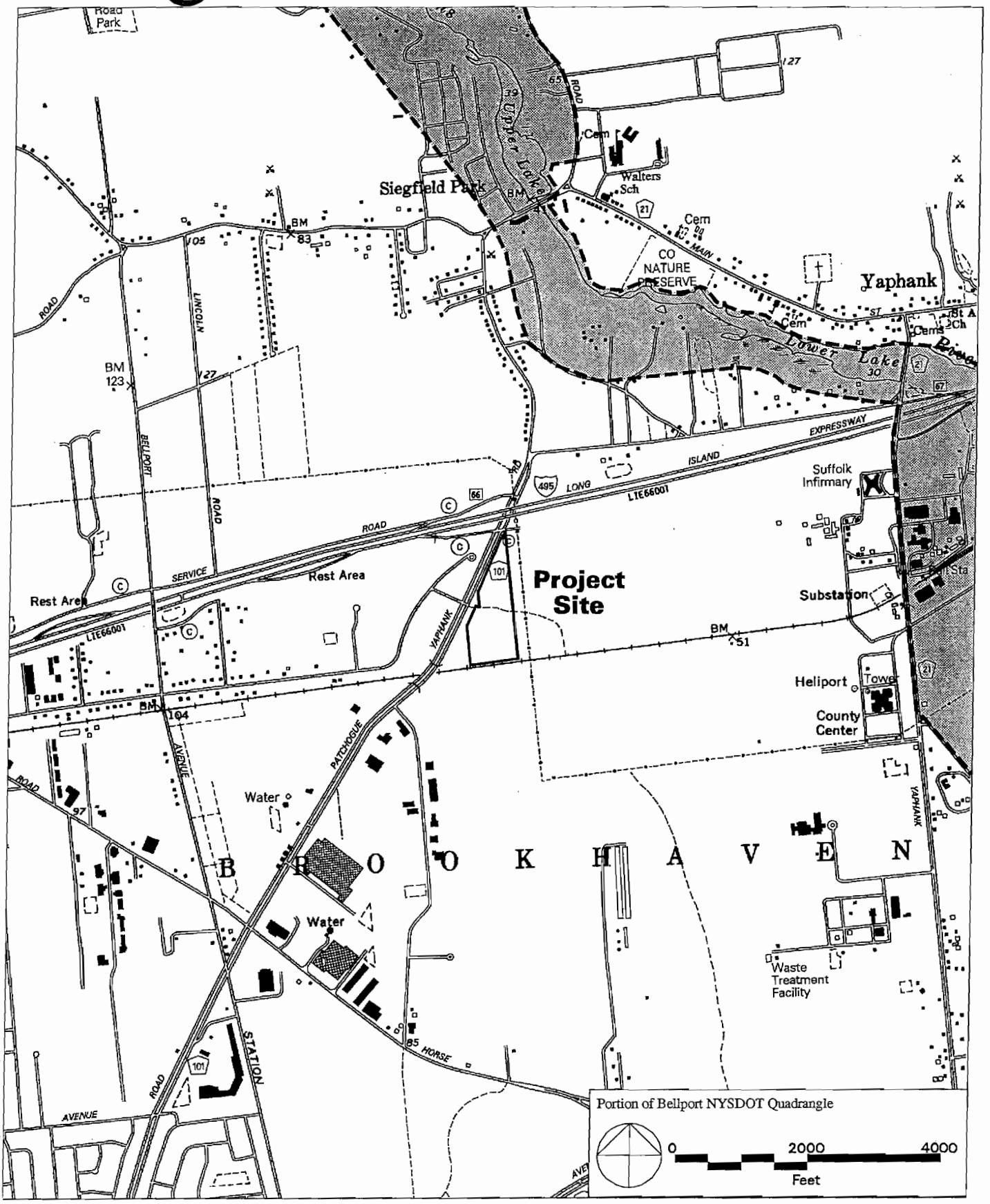
ate: 20 Mar 00 08:01:42 Monday
/usr2/listing/anp-wet.map

New York State Freshwater Wetland

National Wetlands Inventory Wetland

Source: US Fish and Wildlife, NYS DEC

Figure 16 - 4
NWI and State Freshwater Wetlands Near Project Site



WSR Zone
(Boundary Approximate)

Figure 16 - 5
Wild, Scenic, and Recreational River Zones
Near Project Site

Date: 20 Mar 00 17:01:19 Monday
usr2/liisting/sceniciver.map

APPENDIX A

BROOKHAVEN ENERGY'S PROPOSED STIPULATIONS

What are the "Proposed Stipulations?"

"Stipulations," or agreements as to the scope of the Application, help to define the issues of concern to agencies and the public. They specify the studies or programs of study that Brookhaven Energy will undertake in support of its Article X Application. Article X applicants are encouraged to enter into stipulations with DPS, NYSDEC, NYSDOH, and any other interested parties. The statute also encourages early consultation with the public before any stipulations are agreed to, and wide distribution and formal notice of proposed stipulations to give the interested public an opportunity to comment.

Why are the Proposed Stipulations so specific?

Because there have been several merchant power plants recently proposed in New York State, the reviewing agencies and the various applicants have in many cases adopted a template for the stipulations that contains the specific requirements power plant applicants must study irrespective of the site. Thereafter, agencies and applicants have sought to tailor the stipulations template in an appropriate site-specific way, accounting for both site conditions and local public concerns. To date, Brookhaven Energy has used relevant paragraphs from the most recent available templates and has, to the best of its ability, adjusted the template to fit local conditions.

Have the Proposed Stipulations been agreed to?

No. The Proposed Stipulations presented here are simply an attempt to modify stipulations used by other projects to meet the site-specific and local context of the Brookhaven Energy Project. They are proposed by Brookhaven Energy as a starting point. No agencies of members of the public have agreed to the proposed stipulations yet. Brookhaven Energy hopes that presenting the proposed stipulations will facilitate the development of a general consensus on the scope of the Application.

NEW YORK STATE
BOARD ON ELECTRIC GENERATION
SITING AND THE ENVIRONMENT

IN THE MATTER

of the

Case 00-F-_____

Application of Brookhaven Energy Limited Partnership for a Certificate of Environmental Compatibility and Public Need to construct and operate a 580-megawatt natural gas-fired combined cycle combustion turbine electric generating plant in the Town of Brookhaven, Suffolk County, N.Y.

THE PARTIES HERETO stipulate and agree as follows:

1. The Brookhaven Energy Project ("Project") is discussed in an Article X Preliminary Scoping Statement submitted to the New York State Department of Public Service in ("DPS") in March 2000 by Brookhaven Energy Limited Partnership ("Brookhaven Energy"). The term "Project" as used herein includes the energy facility and all on-site improvements, including buildings, structures, fixtures and other improvements associated with the energy facility. Brookhaven Energy will perform or has performed the studies, evaluations, and analyses set forth in these stipulations to satisfy the application requirements of Article X of the Public Service Law. These stipulations are governed by Section 163 of the Public Service Law.

2. Parties hereto may limit their concurrence to one or more of the thirteen specific subject area stipulations by so indicating in a notation next to their signature. A signature without any such notation shall indicate concurrence in all thirteen of the specific subject area stipulations.

3. Those signing these stipulations agree that, as of the date hereof, the studies outlined herein constitute all the necessary studies concerning the subject matter of these stipulations that the applicant must provide to satisfy Section 164 of the Public Service Law. Except as provided herein, the signatories agree not to request the applicant to provide additional studies concerning the subject matter of these stipulations in connection with the Article X proceeding.

4. Under any of the following circumstances, Brookhaven Energy agrees to consult with the signatories about performing any additional study or studies, evaluations or analyses:

   (a) A new statute, regulation or final, non-reviewable judicial or federal administrative ruling or order is adopted subsequent to the date of these stipulations which necessitates such additional studies, evaluations, or analyses;

   (b) Brookhaven Energy proposes a change in the Project or other inputs to the stipulated studies, evaluations or analyses that will affect the results of the studies, evaluations or analyses; or

   (c) New information is discovered during the conduct, or as a result of the stipulated studies, evaluations or analyses that affects the results thereof.

5. After the Chairman of the Siting Board's determination that the application complies with Section 164 of the Public Service Law, if the signatories, in any of the circumstances listed above, reach agreement as to the procedure for the implementation of any additional studies, evaluations or analyses, such agreement shall be set forth in a new stipulation, which shall include the agreement of Brookhaven Energy to extend the statutory deadline for completion of the certification proceeding, but only if and only to the extent necessary to provide sufficient time to permit such study or studies, evaluations or analyses to be conducted and reviewed. Any of the signatories, in the circumstances listed in paragraph 4, who do not reach such agreement, shall be free to submit the matter to the presiding examiner for resolution and shall not be restricted from pleading that Brookhaven Energy must provide additional studies, evaluations or analyses related thereto during the Article X proceeding regarding the subject matter of these stipulations.

6. The term "interconnections" is understood in each and every stipulation to have the following specific meaning:

   (a) Any area to be disturbed for roadway infrastructure, structures or conduits conveying water to and wastewater from the Project, structures or conduits conveying natural gas to the Project, or structures or conduits conveying the electrical output of the Project, if such a facility is proposed to be built for the Project's exclusive use.

   (b) For a facility not proposed to be built for the Project's exclusive use, any area to be disturbed for roadway infrastructure, structures or conduits conveying water to and wastewater from the Project, structures or conduits conveying natural gas to the Project, or structures or conduits conveying the electrical output of the Project, if and to the extent that such a facility requires the creation of new rights-of-way.

PROPOSED STIPULATION NO. 1: AIR QUALITY & METEOROLOGY

The application to be submitted will include an examination of the impacts of criteria pollutants (Study) and non-criteria pollutants (Non-Criteria Study) from the Project on air quality. The components of the Study will include identification of climate and air quality conditions, an inventory of Brookhaven Energy's proposed emission sources, and an assessment of Project technology and design, emissions, impacts, and cumulative impacts. If the Project is found to above Significant Impact Levels, as defined below, the Study will also contain an analysis of cumulative impacts from: background air, existing emission sources, as specified below, and Project's proposed emission sources. The components of the Non-Criteria Study will include identification of emissions constituents and an assessment of Project impacts.

1. To the extent consistent with the following paragraphs contained in this stipulation, the methodologies, standards, and definitions for assessing air quality will follow procedures outlined, and use data contained, in the following documents:

For performing air quality dispersion modeling:

New York State Department of Environmental Conservation ("NYSDEC"), Air Guide-26, NYSDEC Guidelines on Modeling Procedures for Source Impact Analyses (December 1996).

NYSDEC, Air Guide-36, Emission Inventory Development for Cumulative Air Quality Impacts Analysis (June 1995), if necessary.

Air Modeling Protocol to be established to the satisfaction of DEC and DPS Staff specifically for this case (hereinafter "Air Modeling Protocol"), and once approved, to be appended hereto as Attachment I.

USEPA, Draft New Source Review Workshop Manual (October 1990).

NYSDEC, Air Guide-12, Review of Major Sources.

For determining stack height:

USEPA, Guidelines for Determination of Good Engineering Practice Stack Height (EPA Technical Support Document for the Stack Height Regulations), Document Number EPA-450/4-80-023R (June, 1995).

For impacts on soils and vegetation:

USEPA, A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils, and Animals, Document Number EPA-450/2-81-078 (1981).

For quantification and assessment of the Project's contribution to the New York State total deposition of sulfates and nitrates, in accordance with the State Acid Deposition Control Act:

Memorandum from Leon Sedefian to IAM Staff (March 4, 1993).

For performing visibility modeling:

USEPA, Workbook for Plume Visual Impact Screening and Analysis. Document Number EPA-454/R-92-023 (October 1992).

For non-criteria pollutant ambient air limitations and benchmarks:

NYSDEC, Complete & HAP Listing of AGCs, SGCs, and Air Quality Standards for the Air Guide 1 Software Program (October 16, 1995).

USEPA's On-Line Integrated Risk Information System (IRIS) Database.

USEPA's Annual Health Effects assessment Summary Tables (HEAST).

USEPA's National Center for Environmental Assessment (NCEA).

US Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR).

Risk-based ambient air criteria developed by the New York State Department of Health or other state regulatory agencies.

CRITERIA AND OTHER REGULATED POLLUTANTS

2. The air quality Study will include:

(a) An assessment of existing climate data (average and extreme conditions) for the region surrounding the Project obtained from local climatological summaries, meteorological data sets from nearby stations, and/or other sources, as described in the Air Modeling Protocol, required to determine the normals and extremes of wind speed, temperature, and precipitation.

(b) An assessment of existing air quality levels and air quality trends for criteria pollutants in the region surrounding the Project including air quality levels and trends taken from regional air quality summaries and air quality trend reports, as described in the Air Modeling Protocol.

(c) Applicable only if there exists a significant impact area, an existing major emission source inventory within such significant impact area, plus 50 kilometers, using data to be obtained from the NYSDEC and the Connecticut Department of Environmental Protection. The inventory, if necessary, shall be included as an appendix to the application and verified by the source state or per Air Guide 36 requirements and the Air Modeling Protocol (see paragraph 2(q)).

(d) An assessment of the impacts from quantifiable emissions.

(e) A control technology assessment for pollutants subject to Prevention of Significant Deterioration (PSD) review and Nonattainment New Source Review promulgated under 40 CFR 52.21 and 6 NYCRR 231, respectively, to determine the best available control technology (BACT) and lowest achievable emission rate (LAER) for the applicable pollutants.

(f) Pursuant to Air Guide 26, an assessment of an optimal stack height taking into consideration Good Engineering Practice (GEP) stack height for the Project and air quality related values, visual impacts, and other considerations

(g) An assessment of stack emissions of criteria and other regulated air pollutants, stack emissions being provided in hourly and annual estimates based on manufacturer's data, available emission factors, design control efficiencies, and other data or specifications related to the design of the Project.

(h) A calculation of the number of NO_x and VOC emission offsets to be obtained at the 1.3 to 1.0 ratio and how those offsets will be obtained in accordance with 6 NYCRR 231, and a discussion of the applicability and requirements of the "cap and trade" program pursuant to the proposed 6 NYCRR 227-3 and the federal Title IV acid rain program.

(i) An assessment of the potential impacts to ambient air quality that may result from stationary combustion source emissions from the Project, the modeling to be done in accordance with the Air Modeling Protocol, a computer file output of dispersion modeling results to be provided to NYSDEC and DPS Staff.

(j) An assessment of visibility impacts from stationary combustion emissions of NO_X and PM-10 from the Project, as described in the Air Modeling Protocol.

(k) An assessment of the impacts to soils and vegetation that may result from stationary combustion source emissions of the Project using EPA screening criteria (see also Stipulation entitled "Terrestrial Resources" regarding air impacts on wildlife).

(l) An assessment of the impacts of any economic growth that may result from development of the Project in accordance with the Air Modeling Protocol.

(m) An assessment of the predicted air quality impacts from the dispersion modeling analyses to the Prevention of Significant Deterioration (PSD) increments and air quality standards.

(n) In accordance with the State Acid Deposition Control Act, an assessment of the Project's contribution to the New York State total deposition of sulfates and nitrates at defined sensitive receptors as identified in the Air Modeling Protocol.

(o) If applicable, an offsite-consequence analysis for ammonia that will be stored on-site for use in the proposed selective catalytic reduction (SCR) system, including an analysis of an accidental release scenario for ammonia performed to meet the requirements of USEPA's regulations implementing Section 112(r) of the Clean Air Act.

(p) Submittal of a waiver approval for PSD pre-construction monitoring, to be issued by EPA.

(q) If applicable, a cumulative source impact analysis for any air pollutant for which the Project has impacts above significance levels. The additional sources to be analyzed to determine whether the Project, in conjunction with existing and proposed major sources, will cause or contribute to exceedances of applicable National or State ambient air quality standards (NAAQS and NYAAQS) or PSD increments will include those identified as "nearby" existing sources, as defined in the EPA Modeling Guidelines and NSR Workshop Manual, and by the Air Guide 26 procedures. The proposed inventory sources also will include all other proposed major electric generating facilities in New York State for which applications have been filed with the Siting Board and deemed complete (that is, for which the determination to comply with Section 164 of the Public Service Law, pursuant to Section 165.1 of the Public Service Law has been issued). These additional existing and proposed sources will be limited to those located within a circular area defined by the significant impact area (SIA) of the proposed Project, plus 50 kilometers, at the time of NYSDEC approval of the Project's cumulative source inventory per Air Guide 36 requirements.

ADDITIONAL NON-CRITERIA POLLUTANTS

3. The Non-Criteria Pollutant Study will include:

(a) A review of pertinent available data on non-criteria pollutants that are emitted by natural-gas fired combustion turbines, including formaldehyde, ammonia, and any other non-criteria pollutants with emission factors published by USEPA that may be identified after review of available emissions data.

(b) An assessment of the emission rates for non-criteria pollutants that may be emitted from the Project exhaust stacks.

(c) An estimation of the potential ground level air concentrations (short-term and annual averages) of non-criteria constituents, quantified using the models and approach as discussed in the Air Modeling Protocol.

(d) A comparison of the maximum predicted ground level air concentrations to benchmark air concentrations for both short-term and long-term exposures. These benchmark air concentrations will include 1.) NYSDEC Short-term and Annual Guideline Concentrations (SGCs and AGCs), and 2.) Health risk-based criteria, such as Reference Concentrations (RfCs) for noncancer effects and air concentrations associated with an incremental lifetime cancer risk of one-in-one million for cancer, obtained or derived from USEPA or other well-recognized organizations as summarized in item 1 of this stipulation.

(e) If the maximum predicted ground level air concentration of a non-criteria pollutant is estimated to be near or above the respective SGC, AGC or health risk-based benchmark air concentration, the applicant will consult with NYSDEC, DOH, and DPS to develop a protocol for performing a cumulative air quality impact analysis.

(f) If the maximum modeled annual average ground level air concentration of a non-criteria pollutant exceeds one (1) percent (persistent, bioaccumulative toxic chemicals) or ten (10) percent (other chemicals) of the corresponding health risk-based benchmark air concentration, the Application will include an evaluation of the need for a multipathway risk assessment. If the applicant can demonstrate with adequate documentation that the modeled plume will not impact beef or dairy farms, or areas that could support such farms, the ten (10) percent screening factor may be used for all non-criteria pollutants. The Application will include a multipathway risk assessment for those pollutants that exceed these criteria, are persistent in the environment, have the potential to accumulate in soil, water, fish, homegrown vegetables, or beef and dairy products, and, based on the information available in the documents listed in item 1 of this stipulation, are of significant toxicological concern via ingestion relative to the inhalation pathway of exposure.

OTHER ANALYSES

4. A stack plume visibility analysis shall be provided to include an assessment of the predicted length and frequency of any visible water vapor plumes created by the Project in accordance with procedures set forth in the Air Modeling Protocol. The results of this analysis will be used for the visibility assessment discussed in the Stipulation entitled "Visual Resources and Aesthetics".

5. The application will include an assessment based on publicly available information of the global warming (global climate change) issue associated with the emission of carbon dioxide and other global warming gases. The assessment will include: 1) a summary of the emission reduction goals of the Kyoto Protocols, 2) an estimate of the proposed facility's annual and life cycle emissions of carbon dioxide and/or other significant global warming gases, and 3) a comparison of projected facility emissions with New York State, National and/or global emissions, and 4) a conclusory statement as to the probable importance of the proposed facility's emissions relevant to parts 1-3 above.

PROPOSED STIPULATION NO. 2: CULTURAL RESOURCES

The application to be submitted will include a study of the impacts on cultural resources of the construction and operation of the Project (Study). To the extent consistent with the following paragraphs contained in this stipulation, the methodology for assessing the potential impacts on cultural resources will be in accordance with standards and methods contained in the following documents:

New York Archaeological Council, Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State (1994).

Stipulation entitled "Visual Resources and Aesthetics" (established in this proceeding), which sets forth the procedures for assessing visual impacts, including impacts to cultural resources.

ARCHAEOLOGICAL RESOURCES

1. The Study will include:

   (a) Phase IA studies and Phase IB studies for the Area of Potential Effect (APE) for the Project site and any previously undisturbed areas to be used for interconnections, including a description of the methodology used for such studies.

   (b) For interconnections reusing previously disturbed land, neither a Phase IA nor a Phase IB study is required.

   (c) where warranted, Phase II intensive archaeological field investigations will be conducted to assess the boundaries, integrity and significance of cultural resources identified in Phase I studies. Phase II will be designed to obtain detailed information on the integrity, limits, structure, function, and cultural/historic context of an archaeological site, as feasible, sufficient to evaluate its potential National Register eligibility. The need for and scope of work for such investigations will be determined by the Project archaeologists in consultation with OPRHP and DPS Staff.

2. All archaeological materials recovered during the Project cultural resources investigation will be cleaned, catalogued, inventoried and crated according to New York Archaeological Council standards. To the extent possible, recovered artifacts will be identified as to material, temporal or cultural/chronological associations, style and function. The Project archaeologists will provide temporary storage for artifacts until a permanent curatorial facility is identified.

3. The application will include an Unanticipated Discovery Plan that will identify the actions to be taken in the unexpected event that resources of cultural, historical, or archaeological importance are encountered during the excavation process. This plan will include a provision for work stoppage upon the discovery of possible archaeological or human remains. In addition, the plan will specify that the methodology used to assess any discoveries will follow the most recent Standards for Cultural Resource Investigations and Curation of Archaeological Collections in New York State. Such an assessment, if warranted, will be conducted by a professional archaeologist, qualified according to the standards of the New York State Archaeological Council and the National Park Service 36 CFR 61.

4. In the event that significant cultural resources are identified, the Applicant will identify potential measures to avoid or minimize adverse effects to those resources. The OPRHP Coordinator will be consulted throughout the investigation and DPS Staff will be informed of the status and results of the investigations.

HISTORIC RESOURCES

5. The analysis of potential impacts to Historic Resources shall include:

   (a) Field inspections to identify sites or structures listed or eligible for listing on the State or National Register of Historic Places within the Project Viewshed and within a 2-mile radius of the Project site. The "Project Viewshed" has been determined in the Preliminary Scoping Statement.

   (b) Photographs taken of standing structures within the viewshed, which appear to be at least 50 years old and potentially eligible for listing in the State or National Register of Historic Places, based on an assessment by an architectural historian;

   (c) An OPRHP Building Structure Inventory Form will be completed for each potentially eligible (as described in (b)) or listed property and submitted to OPRHP and DPS Staff for review; the applicant will submit its documentation regarding listed and potentially eligible structures within the viewshed to OPRHP and DPS for review prior to completing the visual resources study.

   (d) Potential visual impacts to significant historic structures within the Project Viewshed that are listed, or, in the judgment of an architectural historian, are potentially eligible for listing on the State of National Register of Historic Places, will be characterized as part of the visual resources study, as described in the Stipulation entitled "Visual Resources and Aesthetics".

   (e) A discussion of potential mitigation measures, and an assessment of effects of mitigation on reducing adverse impacts on listed or potentially eligible structures.

PROPOSED STIPULATION NO. 3: ELECTRIC TRANSMISSION FACILITIES

The application to be submitted will describe the electrical interconnection proposed for the Project. It is anticipated that the interconnection will occur at the Project site, and that no new transmission facilities requiring an Article VII filing will be required.

1. The application to be submitted will include a System Impact Study ("Study") done in conformance with the NYISO standards. The Study will include the necessary technical analyses (Thermal, Voltage, Short Circuit and Stability) to evaluate the impact of the interconnection of the Project on the bulk power system. Given the Project's location the work will focus on the LIPA transmission system. Sufficient analysis will also be done of the Project's effect on theNew York Power Pool ("NYPP"), New England and PJM systems to identify any effects. Summer and winter peak load conditions will be investigated, in accordance with the "NPCC Basic Criteria for the Design and Operation of Interconnected Power System", and the NYPP "Standards for Planning and Operating the New York Power Pool Bulk Power System". The NYPP analysis will be limited to the current availability of data and LIPA/Keyspan personnel knowledge and requirements of these systems.

2. Study Scope. The Study will include the following:

   (a) Study Period. The Study will be conducted using the 2003 cases from the FERC-715 Filing, and will include proposed relevant new generation and transmission facilities that precede BEL in the queue published by the NYISO.

   (b) Study Area. The Study will focus on the area of the bulk power system in proximity to and most likely to be affected by the Project; that is, to Holbrook and west to New York City, and to Brookhaven and eastern end of Long Island. The study will confirm that the project does not affect areas beyond that described above. According to the standard practice used in the Operating Studies Task Force (OSTF) studies, phase angle regulators (PARs) will be modeled as regulating (holding scheduled flow at base case level) pre-contingency, and free-flowing post-contingency.

   (c) Analyses

      1) Evaluation of Impact on Transfer Limits and Transfer Capability. Thermal, voltage, and stability analyses will be conducted to assess the performance of the bulk power system with and without the Project in service. These studies will be shared with the PJM ISO and ISO-NE. The analyses will determine the incremental impact of the Project on the normal and emergency transfer limits of relevant transmission interfaces within the study area. Those interfaces include:

- NYPP-PJM
- NYPP-NE.

NYPP-PJM and NYPP-NE transfer limits will be evaluated in both directions. In order to determine transfer limits, the analysis will simulate generation redispatches according to the standard proportions used in the Operating Studies Task Force (OSTF) operating studies.

Thermal analyses will be performed for the summer peak, winter peak, and light load conditions. Voltage and stability analyses will be performed for the summer peak conditions.

Transient stability analysis will be conducted to assess the impact of the Project's dynamic control equipment (power system stabilizer and excitation systems) in accordance with the Guidelines for NPCC Area Transmission Reviews, Section 5.1.5 Review of Dynamic Control Systems (DCS); and the Joint Working Group (JWG)-1 report, "Technical Considerations and Suggested Methodology for the Performance Evaluation of Dynamic Control Systems".

2) Fault Duty Analysis. Short Circuit Analyses will be conducted to evaluate the impact of the Project on adequacy of circuit breakers and related equipment at all LIPA and NYPP member equipment neighboring substations affected by the Project. The study will be coordinated through the NYPP/NYISO System Protection Advisory Subcommittee (SPAS).

3) Extreme Contingency Assessment. Extreme Contingency Assessment (ECA) analysis will include significant load flow studies showing the base case and the post-fault conditions for the contingencies specified in Section 7.0 of the Basic Criteria, entitled "Extreme Contingency Assessment" and report on the most severe contingencies tested. ECA analysis will also include significant stability studies showing the effect on the system of contingencies as specified in Section 7.0 of the Basic Criteria and a report on the most severe contingencies tested.

4) Relay-Coordination. A study will be done to evaluate any relay coordination changes that may be necessary. These changes will be identified and provided to the PJM ISO, ISO-NE, and NYPP/NYISO SPAS.

3. Submittals. Based on the aforementioned Study, the application to be submitted will include the information contained in sub-paragraphs 3 (a) - 3 (h) to the extent the analyses have been completed. The signatories agree that all the analyses required by this

Stipulation need not be filed in the Application for the Chairman of the Board to determine that Application is in compliance with Section 164 of the Public Service Law. To the extent that portions of the Study have not been completed by the time the Application is filed, the Applicant will file as a supplement those analyses that were not included in the Application within 8 weeks of filing the Application.

(a) an evaluation of the potential significant impacts of the Project and its interconnection to the New York State transmission system reliability at a level of detail that reflects the magnitude of the impacts; this evaluation shall include transmission systems under the NYPP/NYISO control and transmission systems under the control of the local utility;

(b) an analysis of the impacts of the Project and associated interconnection facilities on voltage stability, thermal limitations and transmission interface capabilities as prescribed in the NYPP or NYSRC and NPCC (as applicable) planning and operating standards;

(c) a discussion of the benefits and detriments of the Brookhaven Project on ancillary services and the electric transmission system;

(d) an estimate of the increase or decrease in the total transfer capability across each affected interface;

(e) an analysis of the impacts of the Project and associated Interconnection facilities on short circuit capabilities as prescribed in the NYPP or NYSRC and NPCC (as applicable) planning and operating standards;

(f) if applicable, a discussion of the impacts on the transmission system associated with construction of reinforcements as a result of the Project;

(g) an analysis of any reasonable alternatives that would mitigate adverse reliability impacts, if any, of the Project on the New York State transmission system; and: maintain voltage, stability, thermal limitations, and short circuit capability at levels consistent with standards promulgated by NERC, NPCC, and NYPP, or the NYSRC, as applicable; and

(h) an evaluation of reasonable corrective measures that could be employed to mitigate or eliminate any forecasted reduction in transfer capability across affected interfaces that violates reliability requirements.

PRE-APPLICATION PROCESS

4. The Scope of Study a will be provided to DPS Staff and to the NYPP Transmission Planning Advisory Subcommittee (TPAS) or NYISO (as applicable) for comments and review.

5. The Applicant or LIPA will keep DPS Staff and TPAS (or NYISO, as applicable) advised of the Study as it progresses.

6. DPS Staff may request technical conferences with LIPA and the applicant, together, from time to time to discuss the Study as it progresses.

7. All updates and draft reports will be provided concurrently to DPS Staff and TPAS (or NYISO, as applicable) including computer input data and output cases that are used in performing the analysis.

8. Upon completion, the Study will be provided to DPS Staff immediately and to TPAS (or NYISO, as applicable). Upon request of DPS Staff, the Applicant will arrange a technical conference with LIPA and DPS Staff to explain to DPS Staff the scope, inputs, assumptions, change cases and other relevant parameters of the Study.

CONSULTATION PROCESS

9. Upon receipt, the applicant will immediately provide to DPS Staff any TPAS (or NYISO, as applicable) response to the Study. It is agreed that the response need not be provided with the application and that the Chairman of the Siting Board may determine that the application complies with Section 164 of the Public Service Law without the response having yet been provided.

10. Upon receipt, the applicant will immediately provide to DPS Staff any study performed by NYPP (or NYISO, as applicable) regarding the Project.

11. If NYISO is established and it is determined that acceptance of the Study by NYISO is required, the applicant will immediately inform DPS Staff of the occurrence of acceptance of the Study by the NYISO.

12. The applicant agrees to send the Study, or have LIPA send the Study, to the individual members of the NYPP, inviting them to comment.

13. The applicant agrees to notify, or have LIPA notify, the PJM ISO, ISO-NE, and other NPCC regions about the Project and work cooperatively on any joint studies with those entities that are required by their respective FERC-approved tariffs or NPCC procedures.

14. The applicant agrees to provide to DPS Staff concurrently copies of any draft or final studies submitted to PJM ISO, ISO-NE, or any other NPCC regions as well as any computer input data and output data. Comments provided by those ISOs or NPCC regions will be provided to DPS Staff as they are received by the applicant.

CONFIDENTIALITY

15. Regarding information to be provided to DPS Staff as required in this stipulation, nothing herein shall prejudice the applicant's ability to formally invoke trade secret protection pursuant to 16 NYCRR § 6-1.3 and 6-1.4 by submitting the information to the presiding administrative law judge along with the applicant's reasons why the information should not be disclosed to parties other than DPS Staff. If trade secret protection is invoked, the applicant will cooperate with DPS Staff in obtaining a protective order so that DPS Staff may have access to the information without delay.

ELECTRIC AND MAGNETIC FIELDS

16. The Application to be submitted will include an analysis with all input and output data showing that operation under winter normal loading conditions of the proposed interconnection to the Project will comply with (a) the Public Service Commission's applicable electric field strength standards, as set forth in Opinion 78-13 and (b) with the applicable provisions of the Commission's Interim Policy Statement on Magnetic Fields, dated September 11, 1990.

PROPOSED STIPULATION NO. 4: GAS TRANSMISSION FACILITIES

The application to be submitted will describe the natural gas pipeline interconnection proposed for the Project. It is anticipated that the interconnection will occur on the Project site.

1. The application to be submitted will include a study of gas supply, capacity, and system impact (Study). The Study will include:

   (a) A detailed description of the proposed gas pipeline interconnection(s), including interconnection facilities, pipeline route, size, operating pressure, volume of gas required to serve the Project, nature and extent of transportation service as firm, interruptible, or both, the need for new on-site compression, and identifying who will construct, own and operate the pipeline facilities.

   (b) An analysis of the necessary natural gas upgrades and a demonstration that the upgrades will provide sufficient gas supply and available gas pipeline capacity to support the requirements of the Project; and

   (c) An evaluation of the potential impacts of the Project and its interconnection(s) on the gas distribution system of the Local Distribution Company (LDC).

2. Environmental impacts associated with any upgrades are as specified in other stipulations and preamble.

PROPOSED STIPULATION NO. 5: LAND USES AND LOCAL LAWS

LAND USES

1. The application to be submitted will include a study of the land uses in the vicinity of the Project (Study). The Study will include:

   (a) A map of all existing land uses within a 2-mile radius of the Project site, expanded as necessary to include the Southaven County Park.

   (b) A map of existing zoning districts within a 2-mile radius of the Project site, including a description of the permitted/prohibited uses within each zone.

   (c) A map of all publicly known proposed land uses within a 2-mile radius of the Project site, gleaned from interviews with State and local planning officials, from the applicant's public involvement process, or from other sources.

   (d) A qualitative assessment of the compatibility of the Project with existing, potential and proposed land uses, and local and regional land use plans, within a 2-mile radius of the Project site.

   (e) A qualitative assessment of the compatibility of above-ground interconnections with existing, potential and proposed land uses within a 1-mile radius of such improvements.

   (f) A qualitative assessment of the compatibility of underground interconnections with existing, potential and proposed land uses within a 300-foot radius of such improvements.

2. In accordance with Section 1001.7(b)(2)&(3) of the Rules of the Siting Board, the application to be submitted will include a description of the financial resources available to restore any disturbed areas of the Project site in the event the Project is abandoned, cannot be completed, or is decommissioned. These Rules also require the applicant to submit a plan for the decommissioning of the Project site. The application to be submitted will include:

   (a) A statement of the performance criteria proposed for site restoration or decommissioning.

   (b) A discussion of why these performance criteria are appropriate. and

   (c) A demonstration that the financial resources available for restoration or decommissioning are adequate to restore the site to the condition specified in the performance criteria.

(d) A description of any security fund or insurance in place or to be obtained, and the financial resources available to the applicant in the event that either the Project cannot be completed, or that the Project must be decommissioned.

3. The application will include a summary of the applicant's ASTM Phase I Environmental Site Assessment for the Project site.

RECREATION

4. After consultation with appropriate state and local agencies, the application to be submitted shall include an identification and analysis of the recreational land uses in the vicinity of the site, county parks and nature preserves, fishing areas, and town parks that might be affected by the sight or sound of the construction or operation of the Project and interconnections.

LOCAL LAWS

5. The application to be submitted will identify and analyze all substantive provisions of local law applicable to the Project. The application will include:

(a) After consultation with Town of Brookhaven, Suffolk County, and DPS Staff, an identification of all substantive local laws, ordinances, regulations and rules of Town of Brookhaven and Suffolk County applicable to the construction or operation of the Project and interconnections. As part of the consultation, the applicable local laws, ordinances and regulations shall be circulated to the Town of Brookhaven, Suffolk County and DPS Staff. The consulting agencies will also note the relevant discussion in Sections 11 and 16 of the Preliminary Scoping Statement.

(b) An identification of all substantive provisions identified above which the applicant deems to be unreasonably restrictive in view of the existing technology.

(c) For any substantive provisions which the applicant deems to be unreasonably restrictive in view of the existing technology, an explanation of the basis for asserting that the provision is unreasonably restrictive, including a review and analysis of reasonably related local precedent regarding the granting of variances or exceptions.

(d) For the substantive provisions which the applicant does not deem to be unreasonably restrictive, a discussion or other showing demonstrating compliance with the substa ..e provisions identified above.

(e) A summary comparison table in two columns listing the provisions in the first column and the degree of compliance in the second column.

PROPOSED STIPULATION NO. 6: NOISE

The application to be submitted will include a study of the noise impacts of the construction and operation of the Project. To the extent consistent with the following paragraphs contained in this stipulation, the methodology for assessing the potential impacts from noise will follow the procedures and use predictive data provided in the following documents:

Edison Electric Institute, Electric Power Plant Environmental Noise Guide, (EEIG), 2nd Edition, Bolt Beranek and Newman, Inc. Report No. 3637 (1984).

United States Environmental Protection Agency, Model Community Noise Control Ordinance, USEPA Report EPA 550/9-76-003 (September 1975).

United States Environmental Protection Agency, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, USEPA Report NTID300.1, December 1971

Noise source input data for the models referenced herein will be a combination of data acquired from the equipment suppliers, data based on actual measurements of similar equipment at other facilities, and computations from published empirical equipment noise equations.

Regarding noise impacts, the applicant will provide:

1. A map showing the location of the nearest noise receptors in relation to the Project site, including the nearest residential and sensitive receptor locations.

2. An evaluation of ambient pre-construction baseline noise conditions, including pure tones, at the nearest noise receptors, using actual measurement data recorded as a function of time and frequency using a Type 1 precision real time sound level meter (SLM) and octave band frequency spectrum analyzer.

3. A description of the noise design goals for the Project at the nearest noise receptors, including the nearest residential and other sensitive receptor locations.

4. An estimate of noise levels at the nearest noise receptors during construction using the USEPA model (EPA, 1971). The model will account for noise emissions at 50 feet from all pertinent equipment at the site and at the nearest noise receptor points, using A-weighted decibel levels.

5. An identification and evaluation of reasonable noise abatement measures for construction activities.

6. An estimate of noise levels at the nearest noise receptors during operation of the Project using a hemispherical free field (HFF) noise prediction computer model that uses geometrical spreading, atmospheric and anomalous attenuation, on-site structural barrier effects, and effects of prominent terrain features to calculate the sound level decrease with increasing distance from the source. The model will account for the noise emissions from each source in each octave band that propagates to specified receptor points, identifying the source and value of all data inputs used.

7. An identification and evaluation of reasonable noise abatement measures for the final design and operation of the Project during all operating scenarios.

8. An evaluation of the following potential noise impacts: hearing damage (based on OSHA standards); sleep interference; indoor and outdoor speech interference; low frequency noise annoyance; community complaint potential; and the potential for structural damage due to vibration or infrasound;

9. A ranking for the construction and operation phases, using the Modified Composite Noise Rating (CNR) method, at the nearest residential and other sensitive receptor locations; and

10. A description of post-construction noise evaluation studies that will be performed to establish conformance with design goals.

PROPOSED STIPULATION NO. 7: SOCIOECONOMIC

The application to be submitted will include a study of the socioeconomic impacts of the construction and operation of the Project. Regarding socioeconomic impacts, the applicant will provide:

1. An estimate of the number of temporary construction jobs that will be created, by discipline.

2. An estimate of the average construction work force, by discipline, for each quarter, during the period of construction; and an estimate of the peak construction employment level.

3. An estimate of the annual secondary employment and economic activity likely to be generated in the vicinity of the Project by the construction of the plant. This analysis should state the basis of any economic multiplier factor or other assumption used and should include an order of magnitude comparison of the employment and economic activity likely to be generated in the Town of Brookhaven and Suffolk County with recent levels of employment and economic activity.

5. An estimate of the number of jobs and the on-site payroll, by discipline, during a typical year once the plant is in operation, and an estimate of other expenditures likely to be made in the vicinity of the Project during a typical year of operation.

6. An estimate of the annual secondary employment and economic activity likely to be generated in the vicinity of the Project by its operation.

7. A comparison of the anticipated construction work force, by trade, with the construction work force available within commuting distance, assuming a continuation of recent construction work force employment levels, with the exception that the labor force demands of any unusually large Project which has been publicly announced for construction in the vicinity of the Project site during construction of the Project shall be addressed in the analysis.

8. An estimate of the extent and duration of temporary construction worker in-migration.

9. An identification of the amount and location of temporary housing expected to be used by any in-migrating construction workers.

10. An estimate of incremental school operating and infrastructure costs that will be incurred by any affected school district during the construction phase of the Project, this estimate to be made after consultation with the affected school districts.

11. An estimate of incremental school operating and infrastructure costs that will be incurred by any affected school district due to the permanent operation of the Project, this estimate to be made after consultation with the affected school districts.

12. An estimate of incremental municipal, public authority, or utility operating and infrastructure costs that will be incurred by the Town of Brookhaven, Suffolk County, and any other affected municipality, public authority, or utility for police, fire, emergency, water, sewer, solid waste disposal and other municipal, public authority, or utility services during the construction phase of the Project (this estimate to be made after consultation with the affected municipalities, public authorities, and utilities).

13. An estimate of incremental municipal, public authority, or utility operating and infrastructure costs that will be incurred by the Town of Brookhaven, Suffolk County, and any other affected municipality, public authority, or utility for police, fire, emergency, water, sewer, solid waste disposal and other municipal, public authority or utility services due to the permanent operation of the Project (this estimate to be made after consultation with the affected municipalities, public authorities, or utilities).

14. An identification of all jurisdictions (including benefit assessment districts) that levy real property taxes or benefit assessments upon the Project site, its improvements and appurtenances.

15. For each taxing jurisdiction, an identification of the most recent tax rate (or benefit assessment charge), and total tax levy for the jurisdiction.

16. For each taxing jurisdiction, an identification of the most recent assessed value (or benefit formula) assigned to the Project site, its improvements and appurtenances.

17. For each taxing jurisdiction, an identification of the amount of the most recent annual taxes (or benefit charges) levied against the Project site, its improvements and appurtenances.

18. A description of all on-site equipment and systems to be provided to prevent or handle fire emergencies and hazardous substance incidents.

19. A description of all contingency plans to be implemented in response to the occurrence of a fire emergency or a hazardous substance incident.

PROPOSED STIPULATION NO. 8: SOILS, GEOLOGY AND SEISMOLOGY

The application to be submitted will include a study of the soils, geology and seismology impacts of the Project (Study). The components of the Study will include identification and mapping of existing conditions, impact analysis, and proposed mitigation.

1. To the extent consistent with the following paragraphs contained in this stipulation, the methodology for assessing potential impacts related to soils, geology and seismology will follow the appropriate procedures described, or will use data provided, in the following documents:

   American Society for Testing and Materials (ASTM) testing methods and standards.

   Isachsen, Y.W. et al, editors. Geology of New York: A Simplified Account, New York State Museum/Geological Survey (1991).

   Jacob, Klaus. Seismic Vulnerability of New York State: Code Implications for Buildings, Bridges and Municipal Landfill Facilities, National Center for Earthquake Engineering Research (NCEER), Buffalo, New York (April, 1993).

   National Earthquake Information Center. Preliminary Determination of Epicenters, Monthly Listing, USGS.

   New York State Geological Survey, Damaging Earthquakes in New York State 1737-1989 (1989).

   New York State Geological Survey and New York State Museum. New York State Geologic Highway Map (1990).

   Nottis, Gary N., editor. Epicenters of Northeastern United States and Southeastern Canada, Onshore and Offshore: Time Period 1534-1980, New York State Museum Map and Chart Series Number 38 (1983).

   United States Department of Agriculture, Soil Conservation Service, Soil Survey of Suffolk County, New York (1975).

2. Regarding soils, geology, and seismology, the Study will include:

SOILS

   (a) A map delineating soil types on the Project site and interconnections.

(b) A description of the characteristics and suitability for construction purposes of each soil type identified above, including a description of the recharge/infiltration capacity of each soil type and a discussion of any dewatering that may be necessary during construction and whether the Project will contain any facilities below grade that would require continuous dewatering.

(c) A map delineating existing topography showing contours at two-foot intervals on the Project site and interconnections.

GEOLOGY

(e) A map delineating existing slopes (0-3%, 3-8%, 8-15%, 15-25%, 25-35%, 35% and Over) on the Project site and interconnections.

(f) A proposed site plan showing existing and proposed contours at two-foot intervals, for the Project site and interconnections, at a scale sufficient to show all proposed buildings, structures, paved and vegetative areas, and construction areas.

(g) A preliminary calculation of the quantity of cut and fill necessary to construct the Project.

(h) A description and preliminary calculation of the amount of fill material to be brought in to the Project site and interconnections.

(i) A description and preliminary calculation of the amount of cut material or spoil to be removed from the Project site and interconnections.

(j) A delineation of temporary cut or fill storage areas to be employed;

(k) A description of foundation support techniques to be employed.

SEISMOLOGY

(m) A description of the regional geology, tectonic setting and seismology of the Project vicinity.

(n) An analysis of the expected impacts of construction and operation of the Project with respect to regional geology, if such can be determined.

(o) An analysis of the impacts of typical seismic activity experienced in the Project area on the operation of the Project.

PROPOSED STIPULATION NO. 9: TERRESTRIAL RESOURCES

The application to be submitted will include a study of the terrestrial resource impacts of the construction and operation of the Project. Regarding terrestrial resource impacts, the applicant will provide:

VEGETATION

1. To the extent consistent with the following paragraphs contained in this stipulation, the ecological communities will be described according to Reschke, Ecological Communities of New York State (1990);

2. A characterization of the Project site and interconnections as to the type of plant communities present, the structure of these communities and the species composition of each community, based on Spring and Summer reconnaissance or systematic surveys;

3. A list of the species of flowering plants, ferns, and fern relatives occurring on the Project site and interconnections, and the relative abundance of each;

4. A delineation of the vegetative communities or cover type present on the Project site and interconnections on the basis of recent aerial photography and field observations, mapped at a scale of not more than 100 feet per inch (for the site) and 500 feet per inch (for interconnections), including an identification and delineation of any unusual habitats or natural communities which could support listed species or species of special concern;

5. Documentation of the structure of these communities (canopy, understory, and ground cover) by visual observations of either representative sample plots or sampling transects, identifying the structure and composition of the plant communities identified based on dominant species, but all species observed being recorded for the purpose of site inventory;

6. An estimate of the species and number of all trees 12 inches or greater in diameter at breast height, if any, within the Project site;

7. An analysis of the impact of the construction and operation of the Project and interconnections on the vegetation identified, including a delineation of the vegetation areas to be removed or disturbed, mapped at a scale of not more than 100 feet per inch (for the site) and 500 feet per inch (for interconnections);

8. An identification and evaluation of reasonable mitigation measures, including the use of alternative technologies, regarding vegetation impacts identified;

WILDLIFE

9. A characterization of the Project site and interconnections as to the wildlife (including mammals, birds, amphibians, and reptiles) and wildlife habitats, that occur in, on, or in the vicinity of the Project site and interconnections, based on Spring and Summer reconnaissance or systematic surveys, supplemented by available data from the New York State Amphibian and Reptile Atlas Project, the NYS Breeding Bird Atlas and range maps, and other similar reference sources, including an identification and delineation of any unusual habitats or natural communities which could support listed species or species of special concern;

10. A list of the species of mammals, birds, amphibians, and reptiles reasonably likely to occur in, on, or in the vicinity of the Project site based on site observations and supplemented by publicly available sources;

11. An analysis of the impact of the construction and operation, including air emissions, of the Project and interconnections on the wildlife, wildlife habitats, and wildlife travel corridors identified pursuant to paragraphs 9 and 10 above;

12. An identification and evaluation of reasonable mitigation measures, including the use of alternative technologies, regarding wildlife impacts identified pursuant to paragraph 11 above.

PROPOSED STIPULATION NO. 10: TRAFFIC and TRANSPORTATION

The application to be submitted will include a study of the traffic and transportation impacts of the construction and operation of the Project ("Study"). To the extent consistent with the following paragraphs contained in this stipulation, the methodology for assessing the potential traffic and transportation impacts from traffic generated by the construction and operation of the Project will follow the instructions provided in Transportation Research Board, National Research Council, Highway Capacity Manual, Special Report 209, Third Edition 1994.

1. The Study will include a description of the pre-construction characteristics of the roadways in the vicinity of the Project, to include the Long Island Expressway (Interstate 495), Horseblock Road (Suffolk County Route 16), and Sills Road (Suffolk County Route 101). The description will include:

   (a) A review of existing data on vehicle traffic, use levels and accidents obtained from the New York State Department of Transportation;

   (b) A review of existing data on vehicle traffic, use levels and accidents obtained from Suffolk County;

   (c) A review of existing data on vehicle traffic, use levels and accidents obtained from the Town of Brookhaven;

   (d) A review of local school bus routes and schedules obtained from the Longwood School District;

   (e) an identification of approach and departure routes to and from the Project site for police, fire, ambulance and other emergency vehicles;

   (f) a review of available load bearing and structural rating information for expected Project traffic routes;

   (g) the results of peak turning movement counts for typical weekday morning, weekday afternoon, and Saturday midday peaks, to be conducted by the applicant at the following intersections:

   Yaphank Avenue/LIE Exit 67 Eastbound On-Ramp; and
   Long Island Avenue/Yaphank Avenue/LIE Exit 67 Westbound Off-Ramp;
   Long Island Avenue (north of LIE)/ Sills Road;
   LIE Exit 66 Westbound On-Ramp/ Sills Road (County Route 101);
   LIE Exit 66 Eastbound Off-Ramp/Sills Road (County Route 101)
   Sills Road (County Route 101)/Old Town Road;
   Sills Road (County Route 101)/Horseblock Road.

   (h) the results of twenty-four hour traffic volume counts to be conducted by the applicant, including a calculation of average daily traffic (ADT) for each intersection listed above;

(i) for each intersection listed in Paragraph 1(g) above, documentation of the number of approach lanes, the lane widths, shoulder widths, traffic control devices by approaches, and sight distances;

(j) a calculation of the Level of Service (LOS) for each intersection listed above, giving detail for each turning movement; and

(k) an estimate of the annual rate of traffic growth in the vicinity of the Project incorporating general growth and growth from planned land use changes, but not including projected traffic for the Project, including the source and manner of calculation of the estimate.

2. The Study will include an estimate of the trip generation characteristics of the Project during both construction and operation. The estimate will include:

(a) A description of each major phase of construction, including duration of construction, daily shift periods and Project totals;

(b) For each major phase of construction, an estimate of the number and frequency of vehicle trips, including time of day and day of week arrival and departure distribution, by size and type of vehicle;

(c) An identification of approach and departure routes to and from the Project site for vehicles carrying chemicals or hazardous materials for construction of the Project;

(d) For cut activity (spoil removal from the Project site interconnections), a separate estimate of the number and frequency of vehicle trips, including time of day and day of week arrival and departure distribution, and including a delineation of approach and departure routes, by size, weight and type of vehicle;

(e) For fill activity (deposition at the Project site and interconnections), a separate estimate of the number and frequency of vehicle trips, including time of day and day of week arrival and departure distribution, and including a delineation of approach and departure routes, by size, weight and type of vehicle;

(f) An estimate of the number of employees per shift for each major phase of construction;

(g) An identification of the location of housing expected to be utilized by construction workers temporarily relocating to the area, as identified in the studies regarding Socioeconomic effects, including a delineation of approach and departure routes from such housing to the Project site;

(h) A description of the operation of the Project, including the number of employees per shift, operating shift periods and seasonal and annual totals;

(i) An estimate of the number and frequency of vehicle trips generated during operation of the Project, including time of day and day of week arrival and departure distribution, by size and type of vehicle; and

(j) An identification of approach and departure routes to and from the Project site for vehicles carrying chemicals or hazardous materials for operation of the Project.

3. The Study will include a conceptual site plan, drawn at an appropriate scale, depicting all Project site driveway intersections with Sills Road and Old Town Road, showing horizontal and vertical geometry, the number of approach lanes, the lane widths, shoulder widths, traffic control devices by approaches, and sight distances.

4. The Study will include an analysis and evaluation of the traffic and transportation impacts of the Project, including:

(a) A comparison of projected future traffic conditions with and without the proposed Project, including a calculation and comparison of the Level of Service (LOS) for each intersection listed above, giving detail for each turning movement, the analysis to be conducted separately for the peak construction impacts of the Project and for the typical operations of the completed Project;

(b) An evaluation of the adequacy of the road system to accommodate the projected traffic, the analysis to be conducted separately for the peak construction impacts of the Project and for the typical operations of the completed Project;

(c) An identification and evaluation of reasonable mitigation measures regarding traffic and transportation impacts, including the use of alternative technologies, the construction of physical roadway improvements, and the installation of new traffic control devices.

PROPOSED STIPULATION NO. 11: VISUAL RESOURCES AND AESTHETICS

The application to be submitted will include a visual impact assessment (VIA) to determine the extent and assess the significance of Project visibility. The components of the VIA will include identification of visually sensitive resources, viewshed mapping, confirmatory visual assessment fieldwork, visual simulations (photographic overlays), cumulative visual impact analysis, and proposed visual impact mitigation.

1. To the extent consistent with the following paragraphs contained in this stipulation, the methodologies, standards, and definitions for assessing visual resources will follow procedures outlined in the following documents:

   New York State Department of Environmental Conservation, D.E.C. Aesthetics Handbook, 1996.

   U. S. Forest Service, Landscape Aesthetics: A Handbook for Scenery Management, Agriculture Handbook Number 701, 1995.

2. The VIA will address the following issues:

   (a) The character and visual quality of the existing landscape.

   (b) Visibility of the Project, including visibility of Project operational characteristics, such as visible plumes from the exhaust stacks.

   (c) Visibility of all above-ground interconnections.

   (d) Appearance of the Project upon completion, including facade colors and texture.

   (e) Lighting and similar features.

   (f) Representative views (photographic overlays) of the Project, including side and rear views, indicating approximate elevations.

   (g) Nature and degree of visual change resulting from construction of the Project and above-ground interconnections.

   (h) Nature and degree of visual change resulting from operation of the Project.

   (i) Proposed mitigation and mitigation alternatives, including landscaping, lighting options for work areas and safety requirements, and lighting options for stack lighting as required by the FAA.

3. The viewshed analysis component of the VIA will be conducted as follows:

   (a) A viewshed map of the Project study area will be prepared and presented on a 1:24,000 scale recent edition topographic base map. In light of the relatively flat but undulating Long Island terrain and the general absence of ridges, valleys, or coastal areas offering views of great distance, the viewshed study area is defined as the area within a 3-mile radius of the center of the Project site. Beyond 3 miles, viewshed locations will be selected on the basis of areas that have high elevation or that are characterized by land features that appear to afford distant views. The 3-mile radius viewshed map(s) will provide an indication of areas of potential visibility based on topography and vegetation (assumed to be not more than 30 feet above ground) and the top of the Project stacks. The potential screening effects of vegetation will also be shown. Visually-sensitive sites, cultural and historical resources, representative viewpoints, photograph locations, and public vantage points within the viewshed study area will be included on the map(s).

   (b) The VIA will include a detailed description of the methodology used to develop the viewshed maps, including software, baseline information, and sources of data.

   (c) The viewshed mapping will be used to determine the sensitive viewing areas and locations of viewer groups in the Project vicinity. These will include recreational areas, residences, businesses, historic sites (listed or eligible), and travelers (interstate and other highway users).

   (d) The applicant will confer [by signature date, has conferred] with DPS Staff, NYSDEC, and OPRHP in its selection of viewpoints. Viewpoint selection is based upon the following criteria:

      - Representative or typical views from unobstructed or direct line-of-sight views;
      - Significance of viewpoints, especially historic sites, high public use areas, parks and scenic outlooks;
      - Level of viewer exposure, i.e., frequency of viewers or relative numbers, including residential areas, or high volume roadways;
      - Proposed land uses; and
      - Input from local public sources.

4. Leaf-off simulations (photographic overlays) of the Project and interconnections will be prepared from the representative viewpoints established pursuant to paragraph 3(d) herein to demonstrate the post-construction appearance of the Project. Representative viewpoints will be [by signature date, have been] established in consultation with NYSDEC, DPS Staff and OPRHP for this assessment based on the information described in paragraph 3(d) herein. The photographic overlays from each of the viewpoints selected

pursuant to paragraph 3(d) herein will be limited to the Project as it would appear under typical operating conditions. In addition, a photographic overlay will be prepared showing a visible water vapor plume that could occur from the combustion turbine generator stacks under limited operating conditions. The overlay will show a visible water vapor plume representative of average January daytime temperature and humidity conditions, as it may appear from a location representative of the Suffolk County Farm and a location representative of the Yaphank historic district. The depiction of a water vapor plume may be based on visible water vapor plumes from other comparable plants operating under similar conditions or applicable engineering estimates.

5. Additional revised simulations illustrating mitigation will be prepared for those observation points for which mitigation is proposed in the application.

6. Each set of existing and simulated views of the Project will be compared and the change, if any, in visual character will be identified. Based upon the likely viewers, and their likely visual sensitivity, the potential impact will be discussed. Where visual impacts from the proposed facility are identified, potential mitigation measures will be outlined, and the extent to which they effectively minimize such impact will be discussed.

7. An overlay of a USGS map showing the photographic view locations and the results of computer visibility potential modeling will be provided. The overlay will show both the area of potential visbility as determined through terrain and vegetation modeling, and the area of likely visibility, which is a subset of the area of potential visibility, and is determined pursuant to paragraph 6 herein.

PROPOSED STIPULATION NO. 12: WATER RESOURCES

The application to be submitted will include a study of the water resource impacts of the construction and operation of the Project. Regarding water resource impacts, the applicant will provide:

WATER SUPPLY

1. An estimate of the hourly and daily peak and the hourly and daily average water supply needs and consumptive water losses of the Project, in gallons, for each day of a typical year, broken down by power production and domestic uses, with daily, monthly and annual totals;

2. An estimate of the daily peak, daily average, and fire suppression peak and average flow rate needs of the Project in gallons per minute;

3. A description of the methodology used (i.e. estimate, comparison, data, calculation) to prepare the water supply needs and minimum and maximum flow rate estimates stating all factors used;

4. A description of the water chemistry requirements for water to be supplied to the Project, indicating any requirements that are more stringent than New York State standards for potable water, and describing any additional water treatment that will be necessary to obtain the desired chemistry;

5. An identification of the water supply source or sources to be used by the Project, including
   (a) An analysis of the available capacity of the water supply source in terms of quantity, quality, and pressure;
   (b) A cumulative analysis of the impacts of such water usage during both normal and drought periods on other users of the water supply source;
   (c) An identification of all infrastructure requirements necessary to serve the Project;
   (d) The impact of the Project on excess infrastructure capacity, including distribution piping, mains, pumps, storage, or additional supply.

6. A description of the status of negotiations, or a copy of agreements that have been executed, with municipalities, public authorities, companies or individuals for providing water to the Project.

7. An identification and evaluation of other reasonable mitigation measures, including the use of potential alternative supply sources including on-site sub-surface wells, water storage, and offsetting water conservation, regarding water supply impact, and including a

contingency plan for periods of drought or water emergency describing thresholds for water use curtailment.

WASTEWATER

8. A water balance diagram for average and maximum water use operating conditions for the Project that shows in detail all water sources, plant water uses, water treatment facilities, wastewater treatment facilities, and wastewater discharges;

9. An identification and description of any process wastewater generation from the Project, including an estimate of the hourly and daily peak and average volumes and effluent characteristics;

10. An identification and evaluation of reasonable mitigation measures, including the use of on-site subsurface disposal, regarding wastewater generation and disposal impacts;

11. An identification and description of all disposal methods for wastewater generated from the Project, including a review of all options explored for process wastewater disposal, including discharging to municipal sewer systems, aquifer recharge areas, inground discharges, including, as applicable, an analysis of the impacts on water quality and quantity in affected groundwater resources, and an analysis of the impacts of any out-of-basin transfers;

12. An identification and description, including conceptual plans and locations, for all wastewater sewer mains or other improvements, structures or means of interconnection with the Project site for the purposes of wastewater disposal, including a description of available capacity and any limitations on wastewater disposal capacity;

13. A description of the status of negotiations, or a copy of agreements that have been executed, with municipalities, companies or individuals for receiving wastewater from the Project including any restrictions on Project wastewater disposal;

14. An identification and description of any water treatment that will be required prior to discharge as well as the effluent limitations that will need to be met;

15. An evaluation as to whether a SPDES Permit is required for any aspect of the Project, except for stormwater (addressed below);

16. If a SPDES Permit is required, except for stormwater (addressed below), a completed application for the SPDES Permit.

GROUNDWATER

17. A map of the Project site showing the depth to seasonal high groundwater table in the following increments: zero to 1 foot, 1 to 5 feet, 5-foot increments thereafter;

18. A map based on publicly available information showing all areas within a 1 mile radius of the Project site delineating all groundwater aquifers and groundwater recharge areas, and identifying groundwater flow direction, groundwater quality, and the location, depth, yield and use of all public and private groundwater wells or other points of extraction of groundwater, and including delineation of wellwater and aquifer protection zones;

19. An analysis and evaluation of all reasonably potential impacts created by the construction or operation of the Project on groundwater quality and quantity in the Project area, including potential impacts on public and private water supplies and wellhead and aquifer protection;

20. An identification and evaluation of reasonable mitigation measures, including the use of water storage, and offsetting water conservation, regarding groundwater impacts.

SURFACE WATERS

21. A description of the water quality, flow and other characteristics of surface water features, including intermittent streams, on or adjacent to the Project site or interconnections;

22. An identification of the extent of all Waters of the State of New York and the United States, within the Project site or interconnections;

23. A description of the characteristics of all Waters of the State of New York and the United States, identified above;

24. An analysis of the impact of the construction and operation of the Project and interconnections on the surface waters identified above;

25. An identification and evaluation of reasonable mitigation measures regarding impacts on Waters of the State of New York and the United States and the other surface waters identified above.

AQUATIC

26. A description of the aquatic resource characteristics of surface water features identified in paragrah 23, if any;

27. An analysis of the impact of the construction and operation of the Project and interconnections on the aquatic resources identified above;

28. An identification and evaluation of reasonable mitigation measures, including the use of alternative technologies, regarding aquatic resource impacts.

WETLANDS

To the extent consistent with the following paragraphs contained in this stipulation, the methodology for assessing the potential impacts to wetlands will follow the procedures and use predictive data provided in the following documents:

For identifying the appropriate vegetation, hydrology, and soils criteria which would define Federal-jurisdictional wetlands, the US Army Corps of Engineers Wetlands Delineation Manual (1987);

For identifying the appropriate vegetation, hydrology, and soils criteria which would define State-jurisdictional wetlands, the NYSDEC Freshwater Wetlands Delineation Manual (July 1995).

29. An identification of the extent of all federal and state regulated wetlands within the Project site;

30. An identification of the extent of all federal and state regulated wetlands along all interconnections;

31. A description of the characteristics of all federal and state regulated wetlands identified above, including a description of the vegetation, soils, and hydrology data collected for each of wetland sites identified, based on actual on-site wetland observations;

32. An on-site identification and delineation of all federal and state regulated wetlands identified above;

33. A survey or coordinate map of the location of all on-site federal and state regulated wetland boundaries identified above;

34. An analysis of all wetlands within 200 feet of the Project site and the wetlands identified above, observed in the field where accessible to determine their general characteristics and relationship, if any, to wetlands identified in paragraph 32 above (if any);

35. An identification and evaluation of reasonable mitigation measures, including the use of alternative technologies and control of potential phosphorus and nitrogen sources from the Project, regarding wetlands impacts (if any);

CONSTRUCTION/OPERATION STORMWATER RUNOFF

36. A description of all techniques that will be used to prevent stormwater contamination, and a conceptual site plan showing all intended structures and improvements to prevent stormwater contamination, including chemicals, fuel oil or other contaminants from storage facilities, product delivery, plant operation, plant maintenance, and waste handling activities;

37. An evaluation as to whether a SPDES Permit is required for stormwater discharges from the Project;

38. If a SPDES Permit is required for stormwater discharges, a completed application for the SPDES Permit.

39. An identification and evaluation of reasonable mitigation measures, including the use of alternative technologies, regarding stormwater quality impacts.

EROSION CONTROL

40. A preliminary plan for the collection and treatment of stormwater runoff from the site during construction and operation, including delineation of watershed boundaries and subbasins, existing flowpaths and proposed flow path relocations, the location, type, and size of all existing and proposed storm drainage facilities, stormwater outfall and/or subsurface disposal locations and conditions, design flows and outfall velocities, proposed method of stabilizing outfall channels, the location, size and type of nearest upstream and downstream bridge or culvert affected by the Project, location, size and structural details of stormwater detention facilities, preliminary hydraulic calculations for the 2, 10 and 100 year storm frequencies for both existing and proposed conditions, delineation of affected floodways and flood hazard areas, a description of techniques that will be used to prevent or control stormwater-related soil erosion, runoff and subsequent sedimentation in areas that have been cleared and graded, both during construction and operation, an analysis of stormwater impacts, and an identification and evaluation of reasonable mitigation measures regarding stormwater impacts, including the use of alternative technologies and subsurface disposal.

PROPOSED STIPULATION NO. 13: RELIABILITY OF PREFERRED POWER SOURCE AND ALTERNATIVE CONTROL TECHNOLOGY COMPARISON

The Application will contain the following assessments:

1. The Application will contain an assessment, with supporting details, of the reliability and feasibility of the preferred source(s) of power. As part of the supporting details, reliability data for the power block will be provided to the extent they are publicly available, and would include capacity factor; availability; equivalent availability; forced outage rate; equivalent forced outage rate; and starting reliability. If the equipment does not have an operating history, estimates of operating reliability with the rationale will be provided.

2. The Application will explain the basis for the selection of the power block. The Application will include an explanation of the basis for the chosen emission control systems and alternatives, including the LAER (Lowest Achievable Emissions Rate) and BACT (Best Available Control Technology) analyses, as required by the PSD air permit application guidelines.

Accepted and Agreed:

Date: _____

Brookhaven Energy Limited Partnership

Accepted and Agreed:

Date: _____

Staff of the New York State

Department of Public Service

Accepted and Agreed:

Date: _____

New York State

Department of Environmental Conservation

Accepted and Agreed:

Date: _____

New York State

Department of Health

APPENDIX B

OUTREACH AND EDUCATION MATERIAL

"A Company committed to the development, ownership, and operation of electric generating projects in a cost-effective and environmentally responsible manner."

FACT SHEET

Brookhaven Energy Project

What is the Brookhaven Energy Project?

A state-of-the-art natural gas-fired, clean-burning, highly efficient, combined cycle power plant to be developed in an industrially zoned area in the Town of Brookhaven, New York, capable of producing 580 megawatts of electricity.

Who are Brookhaven Energy Limited Partnership and American National Power?

- Brookhaven Energy Limited Partnership is a wholly owned subsidiary of American National Power, Inc. (ANP). ANP, in turn, is a wholly owned subsidiary of National Power PLC, a global electricity generating company which owns and operates approximately 30,000 megawatts (MW) in several countries.
- ANP is headquartered in Texas, with offices in Massachusetts and New York; it is comprised of nearly 60 professional and plant employees.
- ANP develops, acquires, owns, and operates electric generating plants in the United States.
- ANP owns interests in five operating plants in the U.S. and has under construction 2600 megawatts (MWs) in Texas and two 580 MW plants in New England.

Some Project Details

- The Project site is located on approximately 25 acres at the intersection of the Long Island Expressway and Sills Road in the Town of Brookhaven, New York. The site is in an industrial zoned area.
- The Project will be designed to minimize impacts to the environment.
- Project construction is expected to begin at the end of 2001. Construction is anticipated to take approximately two years to complete.

Consider What a Leading Environmental Group Has Said About Similar ANP Projects Under Construction in Massachusetts:

"Conservation Law Foundation believes that this proposal is environmentally positive, and could be one of the building blocks in an environmentally sound energy system for the region's next century."

— Lewis Milford, Energy Project Director
Conservation Law Foundation

Brookhaven Energy Project

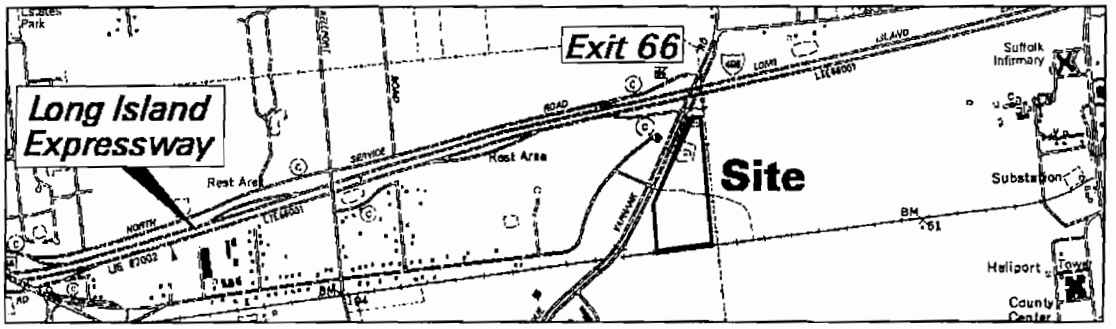
FACT SHEET

What Benefits will the Project Provide?

- The Brookhaven Energy Project will increase Brookhaven's tax base, while placing minimal demand on municipal services.
- The Project will create approximately 700 jobs at peak construction and will provide approximately 25 permanent, full time jobs at the plant during operation.
- The Project will generate opportunities for local vendors to provide services.
- The Project will increase Long Island's supply of competitively priced electricity being produced in an efficient and environmentally beneficial manner and will present an opportunity for much needed low cost electricity for the Town of Brookhaven and the region.

Brookhaven Energy Will Be Responsive to Community Concerns

- In keeping with our development philosophy, we will conduct community outreach to all potential stakeholders. This is intended to ensure that we address as many community concerns as possible.
- Brookhaven Energy will work with Town residents to establish a local liaison committee to meet with the Project Manager on a regular basis to identify and discuss any concerns that community may have with regard to the Project.
- The liaison committee — and the public — will be also be informed as soon as possible on any significant issues or events as the Project proceeds.



How Have ANP Projects Affected Other Communities?

"It's a win-win situation. It would improve air quality and put local people to work."

— Jerry Williams
International Brotherhood of Boilermakers

"Nothing in the information provided in the Draft Environmental Impact Report suggests that there will be an unacceptable impact on neighboring residents."

— Trudy Coxe
Massachusetts Environmental Affairs Secretary

Water Use

- The plant will use an air-cooled condenser (as opposed to a water-cooled condenser) which will minimize water use and wastewater generation. Air cooling represents an approximate 99% reduction in water use compared to water cooling.
- Brookhaven Energy has significant experience in designing and implementing water conservation programs that can save more water on an annual basis than the project uses.

Visual Impacts

- Brookhaven Energy will conduct a number of studies and simulations to identify any visual impacts the plant might have and to develop feasible mitigation measures to minimize such impacts.
- Plant structures will be painted neutral earth-tone colors to blend in with the surrounding environment and thus reduce visibility.
- Stack height will be limited to a maximum of 180 feet, thereby minimizing visual impacts from these structures.

Noise Levels

- The Project is targeted to meet federal, state, and local noise regulations.

Traffic

- Because the plant will employ approximately 25 workers on a three-shift basis, traffic impacts during plant operation will be minimal.
- A traffic plan for the approximately 23 month construction phase will be designed in consultation with local officials and will incorporate mitigation measures as necessary to minimize any disruptions.

What Others Have Said About ANP's Commitment to Water Conservation:

"[ANP] Plant managers are committed to implementing a water conservation and recharge program that will effectively return more water to local aquifers than it will withdraw on an annual basis."

— Robert L. Zimmerman, Jr.
Executive Director
Charles River
Watershed Association

"The Siting Board commends ANP's creative approach to mitigating the water supply and associated water resource impacts of its proposed facility. We view the [water conservation] program as a model for would-be developers of future projects to emulate."

— Massachusetts Energy Facilities
Siting Board

Brookhaven Energy Project

Air Quality Benefits

- Any emissions generated by the facility will be barely measurable in region's "air-shed".
- The plant will be designed to meet the Clean Air Act's "Lowest Achievable Emission Rate" (a standard that must be met regardless of the cost of achieving it) and "Best Available Control Technology" standards.
- Because of air cooling, the generation of a vapor plume will be almost non-existent.
- Because of the facility's high efficiency, the Brookhaven Energy Project will displace the operation of older, less efficient, more polluting electric generating facilities. This will serve to improve regional air quality.

What makes the Brookhaven Energy Project stand out from other currently operating power plants in the region?

- The plant will burn natural gas – the cleanest fossil fuel – to reduce emissions and increase plant efficiency.
- The plant will operate at approximately 60% efficiency - compared to approximately 35% efficiency for typical electric generating facilities. This means the facility will produce about twice the electricity per unit of fuel burned.
- The plant will use state-of-the-art pollution control equipment, which will result in an extremely low emissions rate.
- The plant will use air cooling technology, which will result in very minimal water use.
- The plant will be one of the quietest in the world.

QUESTIONS?

Brookhaven Energy Limited Partnership is committed to keeping the communities in which we operate informed. Should you have any questions, please contact Bob Charlebois by phone at: (516) 205-9741 or by mail at: Brookhaven Energy Limited Partnership, 65 Boston Post Road West, Suite 300, Marlborough, MA 01752 or by email at: rcharlebois@brookhavenenergy.com. For more information about the project, please visit our web site at *www.brookhavenenergy.com*

Brookhaven Energy Project

Project Sponsor

- Brookhaven Energy Limited Partnership is a wholly owned subsidiary of American National Power, Inc. (ANP).
- ANP is a wholly owned subsidiary of National Power PLC, a global electricity generating company which owns and operates approximately 30,000 megawatts (MW) in several countries.
- ANP is headquartered in Texas, with offices in Massachusetts and New York.
- ANP develops, acquires, owns and operates electrical generating plants in the U.S.
- ANP owns interest in five operating plants in the U.S. and has commenced construction of 2600 MWs in Texas and two 580 MW plants in Massachusetts.

Brookhaven Energy Project

Project Description

- A state-of-the-art natural gas fired combined cycle power plant capable of producing 580 megawatts of electricity.
- Located on approximately 25 acres of industrially zoned land at the intersection of the Long Island Expressway and Sills Road in the Town of Brookhaven.
- Designed to minimize impacts to the environment by using clean-burning natural gas, highly efficient electricity generating technology, and cutting edge pollution control and water minimization equipment.
- Developed to be highly cost-competitive with similar sized plants. The Project will operate at approximately 60% efficiency -- compared to approximately 35% for typical plants -- producing almost twice the electricity per unit of fuel burned.
- Project construction is anticipated to begin by the end of 2001 and take approximately two years.

Brookhaven Energy Project

Project Benefits

- Will increase Brookhaven's tax base, while placing minimal demand on municipal services.
- Will create approximately 700 jobs at peak construction and will provide approximately 25 permanent, full time jobs during operation.
- Will increase Long Island's supply of competitively priced electricity, while out-competing older, less efficient, more polluting power plants -- thereby reducing Long Island air emissions -- and will present an opportunity for much-needed low-cost electricity for the Town of Brookhaven.
- Will generate opportunities for local vendors to provide goods and services.

Brookhaven Energy Project

Environmental Issues

Air Quality Benefits

- Any emissions generated by the facility will be barely measurable in the region's "air-shed."
- The plant will be designed to meet the Clean Air Act's "Lowest Achievable Emission Rate" (a standard that must be met regardless of the cost of achieving it) and "Best Available Control Technology" standards.
- Because of air cooling technology used at the plant, the generation of a vapor plume will be almost non-existent.
- Because of its high efficiency, the Project will displace the operation of older, less efficient, more polluting electric generating facilities. This will serve to improve regional air quality.

Brookhaven Energy Project

Environmental Issues (continued)

Water Use

- Will use an air-cooled condenser (a 99% reduction in water use compared to water-cooled condensers) which will minimize water use and wastewater generation.

Visual Impacts

- Plant structures will be painted neutral earth-tone colors to blend in with the surrounding environment, and stack height will be limited to a maximum of 180 feet.

Noise Levels

- Project is targeted to meet federal, state, and local noise regulations and will be one of the quietest in the world.

Traffic

- Traffic plans and any necessary mitigation measures will be designed with consultation from local officials to minimize any disruptions during construction. Traffic during plant operation will be minimal (only approximately 30 workers on a three-shift basis).

Brookhaven Energy Project

Will Be Responsive to Community Concerns

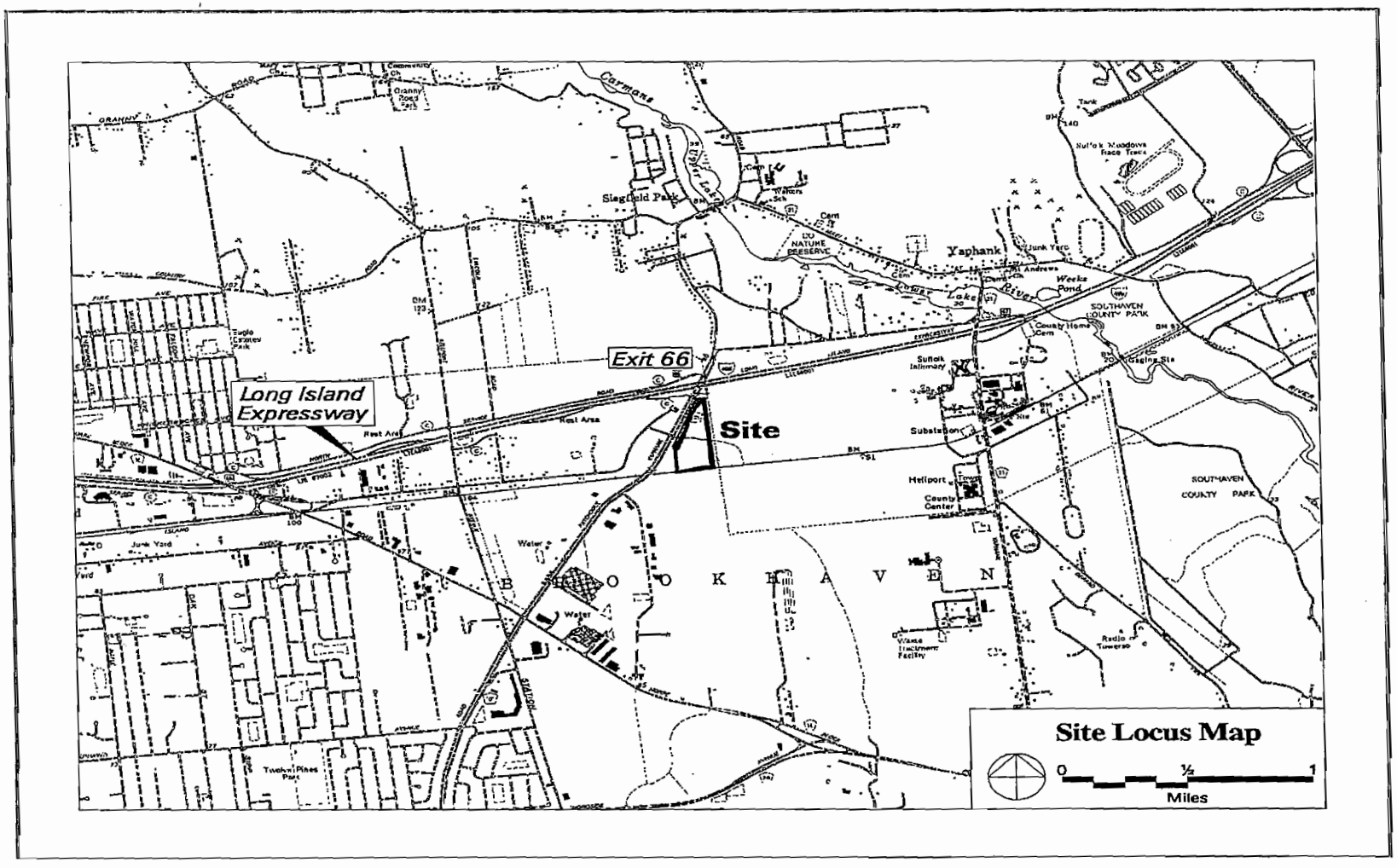
- Over the coming weeks an extensive community outreach effort will be launched. We will meet with stakeholders including neighbors, environmental groups, civic leaders, local officials, and any others who express an interest in the project. This outreach program is consistent with our development philosophy which is intended to ensure that we address as many community concerns as possible.
- Brookhaven Energy will work with Town residents to establish a local liaison committee. This committee will meet with the Project Manager on a regular basis to identify and discuss any concerns that the community may have with regards to the Project.
- The liaison committee -- and the public -- will be also informed as soon as possible on any significant issues or events as the Project proceeds.
- A local number will be published and will connect to Project Manager's desk. A web site will be set up in order to post project information.

Brookhaven Energy Project

Project Simulation

Brookhaven Energy Project

Project Locus Map



Brookhaven Energy Project
Answers to Frequently Asked Questions

Project Description

What is the Brookhaven Energy Project?

- A state-of-the-art natural gas-fired, clean-burning, highly efficient, combined cycle power plant to be developed in an industrially zoned area in the Town of Brookhaven, New York, capable of producing up to 580 megawatts (MW) of electricity.

Where is the Brookhaven Energy Project site located?

- The site is located at the southeast corner of the Long Island Expressway (LIE at Exit 66) and Sills Road 1 – 1.5 miles from the hamlet of Yaphank in the Town of Brookhaven.

Why has this site been chosen?

- The site is zoned industrial.
- The area is surrounded by commercial and industrial properties.
- Electric transmission lines already run through the property.
- A natural gas pipeline runs along the LIE immediately north of the site.
- Water and sewer infrastructure is located within the immediate vicinity.
- The site is already bounded on all sides by open corridors such as highways.

Project Sponsor

Who is the Brookhaven Energy Limited Partnership?

- The Brookhaven Energy Limited Partnership is a wholly owned subsidiary of American National Power, Inc. (ANP). ANP is a wholly owned subsidiary of National Power PLC which develops, acquires, owns and operates electric generating plants in the United States. National Power is a leading independent global electricity generating company that produces an overall capacity of approximately 30,000 MW in several countries.

Has ANP sited other electric generating facilities in the State of New York?

- ANP is in the process of siting a 1,100 MW state-of-the-art natural gas-fired combined cycle power plant in Ramapo, New York.

Project Benefits

Who pays for this facility?

- Unlike the traditional power plant investment that is backed by ratepayers, Brookhaven Energy Limited Partnership will finance the facility at its own risk. Since Brookhaven Energy is a "merchant" plant, ratepayers will have no obligation to bail it out.

Why is this facility necessary?

- Since the State of New York passed legislation to restructure the electric utility industry, independent power producers like ANP are able to develop efficient, environmentally sound generating facilities to compete with and likely displace older, polluting, less efficient plants.

- As Long Island's population grows, so does its demand for electricity. This facility will supply competitively priced electricity and reduce the likelihood of brownouts and blackouts during times of peak demand.

What makes the Brookhaven Energy Project stand out from other power plants?

- This plant will burn natural gas, the cleanest fossil fuel, to reduce emissions and increase plant efficiency.

- The plant will use cutting edge air pollution control equipment, resulting in an extremely low emissions rate and will use air-cooling technology resulting in minimal water use.

- The plant will operate at about 60% efficiency, compared to approximately 35% efficiency for typical power plants. The Brookhaven plant will produce about twice the electricity per unit of fuel burned than other existing plants.

What will the Town of Brookhaven gain by having this facility?

- The Project will increase Brookhaven's tax base, while placing minimal demand on municipal services.

- The Project will create approximately 700 jobs at peak construction and approximately 25 permanent, full time jobs at the plant during operations.

- The Project will generate opportunities for local vendors to provide goods and services.

- The Project will increase Long Island's supply of competitively priced electricity and will present an opportunity for much needed low-cost electricity.

Approval Process

Who has authority over reviewing and approving this Project?

- New York's *Article X* process regulates the siting of electric generating facilities. This process designates the State Board on Electric Generation Siting and the Environment to review and rule on applications pertaining to siting facilities.

- More information on the members of this Board and the Article X Process can be found on the Public Service Commission web site at: www.dps.state.ny.us/articlex.htm

What is the timeline and process for approval?

- After discussing this Project with community leaders and other key stakeholders, Brookhaven Energy Limited Partnership anticipates filing a "Preliminary Scoping Statement" for this Project in the Spring 2000. This document will lead to more discussions with stakeholders. Brookhaven Energy will then file a permit application during the second half of 2000. Once a permit application is filed, the State has one year to review and rule on the application.

When would you expect to finish this facility if approved?

- Project construction is expected to begin by the end of 2001 and is anticipated to take approximately two years to complete.

Environmental Issues

Will the region's air quality be affected by this Project?

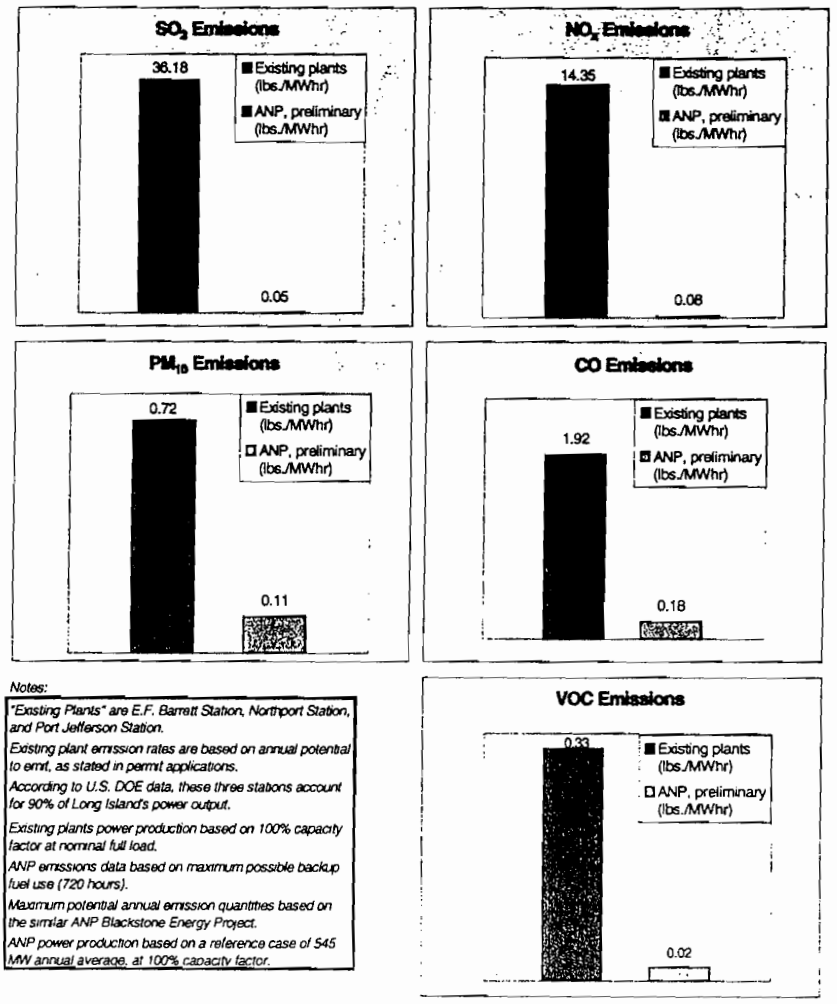
- The facility will be remarkably efficient and will employ state-of-the-art pollution control equipment, which will result in an extremely low emissions rate. Air emissions generated by the facility will be barely measurable in the region's ambient air. Because the plant will displace older, dirtier plants, the Long Island air shed will tend to become cleaner over time.

Will the Town of Brookhaven's air quality be affected by this Project?

- Brookhaven Energy's high efficiency will displace the operation of older, less efficient, more polluting electric generating facilities. This should serve to improve the air quality in Brookhaven and the region.

What will the air emissions be at the Brookhaven Energy facility compared with existing electric generating facilities on Long Island?

- The following five charts depict the air emissions of existing plants in the region with expected air emissions from the Brookhaven Energy facility for emissions of Sulfur Dioxide (SO_2), Nitrous Oxides (NOx), Particulate Matter (PM_{10}), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC).



Notes:

"Existing Plants" are E.F. Barrett Station, Northport Station, and Port Jefferson Station.

Existing plant emission rates are based on annual potential to emit, as stated in permit applications.

According to U.S. DOE data, these three stations account for 90% of Long Island's power output.

Existing plants power production based on 100% capacity factor at nominal full load.

ANP emissions data based on maximum possible backup fuel use (720 hours).

Maximum potential annual emission quantities based on the similar ANP Blackstone Energy Project.

ANP power production based on a reference case of 545 MW annual average, at 100% capacity factor.

Is the Brookhaven Energy Project required to meet federal clean air standards?

- The Brookhaven Energy Project will be designed to meet the federal Clean Air Act's "Lowest Achievable Emission Rate" (a standard that must be met regardless of the cost of achieving this standard) and the "Best Available Control Technology" Standards.

Will there be any visible air emissions?

- Because the plant will use air-cooling instead of water cooling technology, the generation of a visible vapor plume of steam will be almost non-existent. Other air emissions are not visible.

How much water will Brookhaven Energy use?

- The plant will use an air-cooled condenser. Air-cooling represents an approximate 99 percent reduction in water use compared to the amount of water needed for power plants using water-cooling. During normal operation, the plant will use only about 29,000 gallons per day. This is the amount of water contained in one and a half backyard swimming pools.

What if there is a drought?

- In the event of drought, the Project would be subjected to the same water restrictions and local regulations that apply to other industrial users. There will be water storage tanks at the site, which would allow the plant to operate for a period of time in the event of curtailment of normal water supply.

Will this facility effect Brookhaven's drinking water supply?

- The minimal amount of water needed during operation will be derived from Suffolk County Water Authority, which has an elevated tank, water main and pumping station near the site.

What kind of wastewater will be produced by this facility?

- This facility will use modern air-cooling technology, so the amount of wastewater created will be minimal. The wastewater will be non-toxic and will be discharged into the local sewer system, not directly into any surface water body or aquifer.

Will there be any noise coming from the new plant?

- This facility will be one of the quietest electricity generation facilities in the world and will meet all federal, state and local noise regulations.

Will there be any visual impacts?

- Plant structures will be painted in neutral earth-tone colors that will minimize visual impacts.

- The stack height will be limited to a maximum of 180 feet - the approximate height of an eighteen-story building.

- Visual impacts from any location will be assessed through terrain modeling and photography and the ultimate generation of computer simulations.

How much land will be used in developing this facility?

- The Project site is 25 acres, and is located in an industrially zoned area, near the North Bellport Economic Development Zone.

Traffic

Will there be an impact on traffic?

- Because the plant will employ approximately 25 workers on a three-shift basis, traffic impacts during plant operation will be minimal. During the construction phase, Brookhaven Energy will consult with officials to ensure that traffic mitigation measures are employed. The site is located directly off the Long Island Expressway.

Safety

Will this facility pose any safety threats to the community?

- This facility will pose no safety hazards to members of the Brookhaven community. Brookhaven Energy Limited Partnership will institute comprehensive contingency plans designed to address the unlikely occurrence of an emergency situation.

Community Outreach

Will the Brookhaven Energy Project keep me updated on the Project?

- As a result of our responsiveness to community concerns, we have earned endorsements form leading environmental groups, including the Conservation Law Foundation and the Charles River Watershed Association in regard to similar projects in Massachusetts.

- In keeping with our company's development philosophy, Brookhaven Energy will:

  - Conduct community outreach to all potential stakeholders and will address as many community concerns as possible.
  - Establish a local liaison committee with residents and who meet regularly with the Project Manager to identify and discuss community concerns.
  - Establish a local phone line and e-mail address that connects to the Project Manager's desk.
  - Create a web site to describe this project and provide periodic updates.

What if I have questions not answered here?

If you have additional questions, please contact Project Manager, Bob Charlebois by,

Phone. (516) 205-9741
E-mail: Rcharlebois@brookhavenenergy.com
Write: Brookhaven Energy Limited Partnership
65 Boston Post Road West, Suite 300
Marlborough, MA 01752

Or, visit our web site at *www.brookhavenenergy.com*

APPENDIX C

DISTRIBUTION LIST AND LIBRARY AVAILABILITY

Preliminary Scoping Statement

Service List

The service list has been attached directly to the cover letter accompanying the Preliminary Scoping Statement.

Display and Reproduction Versions of Preliminary Scoping Statement

To better enable duplication of individual pages, the display versions of the Preliminary Scoping Statement use single-sided pages for easier reproduction, but are identical in all other respects. Display and reproduction versions have been sent to the following locations.

Location	Address	Hamlet/Village	Telephone
Arthur Kunz Planning Library	H. Lee Dennison Bldg., 4th fl.	Hauppauge	(631) 853-5190
Bayport-Blue Point Public Library	203 Blue Point Avenue	Blue Point	(631) 363-6133
Brookhaven Free Library	273 Beaverdam Road	Brookhaven	(631) 286-1923
Comsewogue Library	170 Terryville Road	Port Jefferson Sta.	(631) 928-1212
Emma S. Clark Memorial Library	120 Main Street	Setauket	(631) 941-4080
Center Moriches Free Public Library	235 Main Street	Center Moriches	(631) 878-0940
Longwood Public Library	800 Middle Country Road	Middle Island	(631) 924-6400
Mastic-Moriches-Shirley Community Library	525 William Floyd Parkway	Shirley	(631) 399-1511
Middle Country Public Library	101 Eastwood Blvd.	Centereach	(631) 585-9393
Middle Country Cultural Center	575 Middle Country Road	Selden	(631) 732-5002
Patchogue-Medford Library	54-60 East Main Street	Patchogue	(631) 654-4700
Port Jefferson Free Library	100 Thompson Street	Port Jefferson	(631) 473-0022
Sachem Public Library	150 Holbrook Road	Holbrook	(631) 588-5024
Shoreham-Wading River Library	Rte. 25A	Shoreham	(631) 929-4488
South Country Library	22 Station Road	Bellport	(631) 286-0818
Suffolk County Clerk	Evan Griffing Building	Riverhead	(631) 852-2000
SUNY-Stony Brook	Main Library	Stony Brook	(631) 632-7100
Town of Brookhaven, Clerk's Office	205 South Ocean Ave.	Patchogue	(631) 654-7827
Town of Brookhaven Planning Div.	3233 Route 112	Medford	(631) 451-6400

APPENDIX D

STAKEHOLDER DATABASE

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
County Elected Officials								
Alden	Cameron	Legislator	Suffolk County Legislature	21 Maple Avenue		Bay Shore	NY	11706
Binder	Allan	Legislator	Suffolk County Legislature	1789 East Jericho Turnpike		Huntington	NY	11743
Bishop	David	Legislator	Suffolk County Legislature	276 North Wellwood Avenue		Lindenhurst	NY	11757
Caracappa	Joseph	Legislator	Suffolk County Legislature	248 Middle Country Road	Building 1 - Suite #3	Selden	NY	11784
Caracciolo	Michael	Legislator	Suffolk County Legislature	633 East Main Street		Riverhead	NY	11901
Carpenter	Angie	Legislator	Suffolk County Legislature	4 Udall Road		West Islip	NY	11795
Cooper	Jon	Legislator	Suffolk County Legislature	182 Main Street		Huntington	NY	11743
Crecca	Andrew	Legislator	Suffolk County Legislature					
D'Andre	Michael	Legislator	Suffolk County Legislature	59 Landing Road		Smithtown	NY	11787
Fields	Ginny	Legislator	Suffolk County Legislature	2941 Sunrise Highway		Islip Terrace	NY	11752
Fisher	Vivian	Legislator	Suffolk County Legislature	46 Route 25A - Suite 5		East Setauket	NY	11733
Foley	Brian	Legislator	Suffolk County Legislature	27 Havens Avenue		Patchogue	NY	11772
Gaffney	Robert	County Executive	Suffolk County Executive	100 Veterans Memorial Highway	P.O.Box 6100	Hauppauge	NY	11788
Guldi	George	Legislator	Suffolk County Legislature	140 West Montauk Highway		Hampton Bays	NY	11946
Haley	Martin	Legislator	Suffolk County Legislature	725 Route 25A		Miller Place	NY	11764
Levy	Steve	Legislator	Suffolk County Legislature	22-30 Railroad Avenue	Suite 2	Sayville	NY	11782

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
Postal	Maxine	Legislator	Suffolk County Legislature	15 Albany Avenue		Amityville	NY	11701
Tonna	Paul	Legislator	Suffolk County Legislature	1996 Deer Park Avenue		Deer Park	NY	11729
Towle Jr.	Fred	Legislator	Suffolk County Legislature	640 Montauk Highway		Shirley	NY	11967
County Officials								
Frelang	Andrew	Principal Planner	Suffolk Country Department of Planning	H.Lee Dennison Bldg 4thFl	Veterans Memorial Hwy	Hauppauge	NY	11788
Gatta	George	Deputy County Executive	Suffolk County Department of Planning	Suffolk Country Executive Office	H.Lee Dennison Building	Hauppauge	NY	11788
Jones	Stephen M.	Comis-sioner	Suffolk County Department of Planning	100 Veterans Memorial Highway	P.O.Box 6100	Hauppauge	NY	11788
Koppelman	Dr. Lee E.	Executive Director	Long Island Regional Planning Board	100 Veterans Memorial Highway		Hauppauge	NY	11788
Koppelman	Dr. Lee E.	Director and Leading Professor	Center for Regional Policy Studies	SUNY at Stony Brook	Social and Behavior Sciences Bldg Room N-703	Stony Brook	NY	11794 4395
Strzepek	Richard	Director	Suffolk County Wastewater Management and Pretreatment, DPW	335 Yaphank Avenue		Yaphank	NY	11980
Federal Elected Officials								
Forbes	Representative Michael P.	U.S.Congressman	U.S.House of Representatives	1500 William Floyd Parkway	Suite 201	Shirley	NY	11967
Moynihan	Senator Daniel Patrick	U.S.Senator	U.S.Senate	405 Lexingtor Avenue	Suite 6200	New York	NY	10174
Schumer	Senator Charles E.	U.S.Senator	US.Senate	26 Federal Plaza	Suite 31-100	New York	NY	10278
State Elected Officials								
Pataki	George	Governor	State of New York	State Capitol		Albany	NY	12224

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
Acampora	Assembly-woman Patricia	State Assembly-woman	State of New York	1149 Old Country Road Suite B3		Riverhead	NY	11901
Englebright	Assembly-man Steven	State Assembly-man	State of New York	149 Main Street		Setauket	NY	11733
Lack	Sen. James	State Senator	State of New York	Veterans Memorial Highway State Office Building		Hauppauge	NY	11788
Lavalle	Sen. Kenneth	State Senator	State of New York	325 Middle County Road		Selden	NY	11784
Mazzarelli	Assembly-woman Deborah	State Assembly-woman	State of New York	228 Waverly Avenue		Patchogue	NY	11772
Thiele, Jr.	Assembly-man Fred	State Assembly-man	State of New York	2302 Main Street		Bridgehampton	NY	11932
Trunzo	Sen. Caesar	State Senator	State of New York	Veterans Memorial Highway NYS Off.Bldg		Hauppauge	NY	11788
Brookhaven Elected Officials								
Davis	George	Councilman	Town of Brookhaven	3323 Route 112		Medford	NY	11763
Garcia	Jesse	Deputy Supervisor	Town of Brookhaven	3323 Route 112		Medford	NY	11763
Gerrard	Eugene	Councilman	Town of Brookhaven	3323 Route 112		Medford	NY	11763
Grucci	Felix J., Jr.	Supervisor	Town of Brookhaven	3323 Route 112		Medford	NY	11763
Hennessey	Edward	Councilman	Town of Brookhaven	3323 Route 112		Medford	NY	11763
LaValle	John	Councilman	Town of Brookhaven	3323 Route 112		Medford	NY	11763
Santoro	Dominic	Councilman	Town of Brookhaven	3323 Route 112		Medford	NY	11763
Strebel	Patricia	Council-woman	Town of Brookhaven	3323 Route 112		Medford	NY	11763
Village Mayors								
Bove	Vincent	Mayor	Village of Belle Terre	1 Cliff Road		Belle Terre	NY	11777

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Crescenzo	Jean	Mayor	Village of Poquott	Village Hall	45 Birchwood Ave	Poquott	NY	11733
Garrant	Jeanne	Mayor	Village of Port Jefferson	121 W.Broadway		Port Jefferson	NY	11777
Hanke	Robert	Mayor	Village of Lake Grove	PO Box 708		Lake Grove	NY	11755
Keegan	Steven	Mayor	Village of Patchogue	14 Baker Street	PO Box 719	Patchogue	NY	11772
Staller	Cary	Mayor	Village of Old Field	PO Box 2724		Setauket	NY	11733
Tastrom	Virginia	Mayor	Village of Shoreham	PO Box 389	Woodville Road	Shoreham	NY	11786
Trotta	Frank C.	Mayor	Village of Bellport	29 Bellport Lane		Bellport	NY	11713
State Regulatory Officials								
Cahill	John P.	Comis-sioner	New York Department of Environmental Conservation	50 Wolf Road		Albany	NY	12233
Cooper	Diane	Outreach and Education Specialist	Consumer Education and Advocaty State of New York Department of Public Service	3 Empire State Plaza		Albany	NY	12223 1350
Cowen	Raymond	Regional Director	New York Department of Environmental Conservation	SUNY Building 40		Stony Brook	NY	11790
Brookhaven Officials								
Betheil	Pamela	Planning Board	Town Planning Board	3233 Route 112		Medford	NY	11763
Trotta	Frank C.	Chairman	Board of Zoning Appeals	3233 Route 112		Medford	NY	11763
Cavalieri	Mario	Member	Board of Zoning Appeals	3233 Route 112		Medford	NY	11763

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
Coppes	Grace M.	Member	Board of Zoning Appeals	3233 Route 112		Medford	NY	11763
Liquori	Vincent	Member	Board of Zoning Appeals	3233 Route 112		Medford	NY	11763
Aloisio	Anthony	Town Director	Department of Economic Development	3233 Route 112		Medford	NY	11763
Bivona	John	Deputy Comis-sioner	Department of Waste Management	3233 Route 112		Medford	NY	11763
Bonacci	Donna	Director	Senior Citizens Program	Mod Building Route 25A		Mt.Sinai	NY	11766
Chawner	Linda	Town Officer	Brookhaven Personnel	3233 Route 112		Medford	NY	11763
Dark	Andrew	Chief Building Inspector	Town of Brookhaven	3233 Route 112		Medford	NY	11763
De Maio	Anthony	Town Purchasing Director	Town of Brookhaven	3233 Route 112		Medford	NY	11763
Dragone	Vincent	Deputy Comis-sioner	Department of Planning, Environment and Development	3233 Route 112		Medford	NY	11763
Friscia	Richard	Comis-sioner	Department of Public Safety	3233 Route 112		Medford	NY	11763
Girandola	John	Comis-sioner	Department of Planning, Environment and Development	3233 Route 112		Medford	NY	11763
Graham	James, Jr.	Comis-sioner	Division of General Aviation/comis-sioner	Brookhaven Airport	135 Dawn Drive	Shirley	NY	11967
Graham	Ted	Comis-sioner	Town of Brookhaven Engineering	3233 Route 112		Medford	NY	11763

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
Janetti	Anthony	Deputy Comis-sioner	Brookhaven Department of Engineering	3233 Route 112		Medford	NY	11763
Kassner	Jeffrey	Director	Town Department of Environmental Protection	3233 Route 112		Medford	NY	11763
Kerins	Martin J.	Deputy Supervisor	Town of Brookhaven	3233 Route 112		Medford	NY	11763
Kimlicka	Daniel	Comis-sioner	Department of Parks, Recreation and Human Resources	1130 Old Town Road		Coram	NY	11727
Leuffen	Kurt	Superintend ent	Department of Recreation	1130 Old Town Road		Coram	NY	11727
Lovino	Madeline	Deputy Reciever of Taxes	Receiver of Taxes Office	250 East Main Street		Port Jefferson	NY	11777
Lynch	Dennis	Comis-sioner	Department of Waste Management	3233 Route 112		Medford	NY	11763
Malkmes	Harold	Superintend ent	Department of Highways	Old Town Road		Coram	NY	11727
McCarthy	Wiliam	Deputy Comis-sioner	Department of Parks, Recreation and Human Resources	1130 Old Town Road		Coram	NY	11727
Molloy	Kevin	Officer	Public Information Office	3233 Route 112		Medford	NY	11763
Moloney	F. Daniel	Receiver of Taxes	Receiver of Taxes	250 East Main Street		Port Jefferson	NY	11777
Murray	Lauri	Deputy Town Clerk	Town Clerk's Office	205 South Ocean Avenue		Patchogue	NY	11772
Overton	David	Town Historian		205 S.Ocean Avenue		Patchogue	NY	11772

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Potter	Raymond	Deputy Supervisor	Department of Highways	Old Town Road		Coram	NY	11727
Reutzel	Robert	Comis-sioner	Department of Housing, Community, and Intergovernmental Affairs	3233 Route 112		Medford	NY	11763
Rignola	Anthony	Deputy Comis-sioner	Department of Public Saftey	3233 Route 112		Medford	NY	11763
Rodriguez	Doug		Division of Code Enforcement	Old Town Road		Coram	NY	11727
Ryan	James	Assesor	Assessor's Office	3233 Route 112		Medford	NY	11763
Sauerwein	Joseph	Chief Fire Marshall	Fire Department	3233 Route 112		Medford	NY	11763
Springhorn	Nancy		Division of Special Districts	3233 Route 112		Medford	NY	11763
Stanley	Allan	Town Clerk	Town of Brookhaven	205 South Ocean Avenue		Patchogue	NY	11772
Strauss	Allan	Director	Department of Traffic Safety	3233 Route 112		Medford	NY	11763
Westerlund	Rae	Secretary	Board of Zoning Appeals	3233 Route 112		Medford	NY	11763
Williams	Thomas	Executive Director	Youth Bureau	205 South Ocean Avenue		Patchogue	NY	11772
Zangi	Eugene	Vice-Chairman	Board of Zoning Appeals	3233 Route 112		Medford	NY	11763
			Holtsville Ecology Site	Buckley Road		Holtsville	NY	11742

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
			Division of Signage	Old Town Road		Coram	NY	11727
Janetti	Anthony	Deputy comis-sioner	Division of Streetlighting	161 Dawn Drive		Shirley	NY	11967
			Division of Highway, Road, and Bridge Maintenance	Old Town Road		Coram	NY	11727
Kimlicka	Daniel	Comis-sioner	Division of Parks Maintenance Services	1130 Old Town Road		Coram	NY	11727
			Division of Planning	3233 Route 112		Medford	NY	11763
Reutzel	Robert	Comis-sioner	Division of Water Resources	3233 Route 112		Medford	NY	11763
Local Party Leaders								
Apolero	Tony	Chairman	Suffolk County Republican Committee Chairman	3340 Veterans Memorial Highway		Bohemia	NY	11716
Mitchell	Kevin		Brookhaven Democratic Leader					
Bivona	John		Brookhaven Republican Leader	3233 Route 112		Medford	NY	11763
Business Associations								
Crosson	Matthew	Executive Director	Long Island Association	80 Happauge Road		Commack	NY	11725 4495
Davidson	Cheryl	Executive Director	Long Island Works Coalition	135 Maxess Road		Commack	NY	
Pally	Mitchell	Vice President of Legislative and Economic Affairs	Long Island Association	80 Hauppage Road		Commack	NY	11725 4495

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Raacke	Gordian	Executive Director	Citizen's Advisory Panel	P.O.Box 789	2316 Main Street, suite G	Bridgehampton	NY	11932
Tublisky	Marcy	HIA Executive Director	Hauppauge Industrial Association	P.O.Box 11004		Hauppauge	NY	11788
Pearson	Pat	Education Director	Cornell Cooperative Extension	246 Griffing Avenue		Riverhead	NY	11901 3086
Chambers of Commerce								
Hoag	Gail	Executive Director	Greater Patchogue Chamber of Commerce	15 N.Ocean Avenue		Patchogue	NY	11722
Pappas	Chris	President	Port Jefferson Station/Terryville Chamber of Commerce	Box 600		Port Jefferson Station	NY	11776
Farren	Kathy	Director	Three Village Chamber of Commerce	P.O.Box 686		East Setauket	NY	11733
			Farmingville/ Holtsville Chamber of Commerce	P.O.Box 172		Farmingville	NY	11738
Asaro	Joe	President	Mastics & Shirley Chamber of Commerce	P.O.Box 4		Mastic	NY	11950
Sapanaro	Geraldine	President	Moriches Chamber of Commerce	P.O.Box 686		Center Moriches	NY	11934
Monahan	Bill	Executive Director	Greater Port Jefferson Chamber of Commerce	118 W.Broadway		Port Jefferson	NY	11777
Libraries								
Bonanno	Estegrine C.	Director	Port Jefferson Free Library	100 Thompson Street		Port Jefferson	NY	11777
Burns	Liz	Director	Brookhaven Free Library	Beaverdam Road		Brookhaven	NY	11719
Campbell	Patricia	Director	The South Country Library	22 Station Road		Bellport	NY	11713
Cicola	Willima	Director	Mastics-Moriches-Shirley Community Library	William Floyd Parkway		Shirley	NY	11967
Clemens	David	Director	Longwood Public Library	Middle Country Road		Middle Island	NY	11953

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Elenausky	Edward	Director	Emma Clark Memorial Library	120 Main Street		Setauket	NY	11753
Feinberg	Sandra	Director	Middle Country Public Library	Main Library	101 Eastwood Blvd	Centereach	NY	11720
Gibbard	Judith	Director	Patchogue-Medford Library	54-60 East Main Street		Patchogue	NY	11772
Lusak	Richard	Director	Comsewogue Public Library	170 Terryville Road		Port Jefferson Station	NY	11776
O'Hare	John	Director	Bayport-Blue Point Public Library	203 Blue Point Ave		Blue Point	NY	11715
Peel	Nan	Director	Center Moriches Free Public Library	235 Main Street		Center Moriches	NY	11934
Willner	Judy	Director	Sachem Public Library	150 Holbrook Road		Holbrook	NY	11741
Civic Associations								
Baldassare	Lori		Mount Sinai Civic Association	8 Gardenia Road		Mt.Sinai	NY	11766
Banks	Donald		Miller Place Park Beach Corp.	P.O.Box 833		Miller Place	NY	11764
Barone	Marguerite		Holtsville Civic Association	P.O.Box 35		Holtsville	NY	11742
Behrens	Russ		Yaphank Taxpayers & Civic Association	15 Private Road		Yaphank	NY	11980
Berger	Karl		Yaphank Taxpayers & Civic Association	2 Frederick Dr.		Shoreham	NY	11786
Blasberg	Daryl		Sound Beach Civic	72 Lookout Drive		Sound Beach	NY	11789
Cartiglia	Nancy		Bay Area Civic Association	P.O.Box 565		Shirley	NY	11967
Cavallo	Sam		Tri Hamlet Neighborhood Watch	369 Neighborhood Road		Mastic Beach	NY	11951
Colvin	Ben		Moriches Bay Civic Association	P.O.Box 46		Center Moriches	NY	11934
Essel	Nanette	President	Yaphank Taxpayers & Civic Association	P.O.Box 41		Yaphank	NY	11980

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Faigle	John		The Main Street Association	45 Main Street		Stony Brook	NY	11790
Garber	Donald	Officer	Affiliated Brookhaven Civic Organization (ABCO)	P.O.Box 523		Rocky Point	NY	11778
Giacomaro	Michael	President	East Yaphank Civic Association	P.O.Box 566		Yaphank	NY	11980
Hurley	Fran		Yaphank Taxpayers & Civic Association	15 Garden Lane		Yaphank	NY	11980
Jacob	Charlotte		Yaphank Taxpayers & Civic Association	372 Middledel Road		Yaphank	NY	11980
Karlovits	Emily		Yaphank Taxpayers & Civic Association	15 Garden Lane		Yaphank	NY	11980
Kelly	Thomas		South County Shores Civic Association	70 Southern Blvd.		East Patchogue	NY	11772
Kepert	Connie		Middle Island Civic Association	P.O.Box 735		Middle Island	NY	11953
Kepert	Connie	President	Affiliated Brookhaven Civic Organization (ABCO)	P.O.Box 523		Rocky Point	NY	11778
Kotler	Kathy		Farmingville Improvement Council	P.O.Box 127		Farmingville	NY	11738
Kuehn	Lorraine		Manorville Taxpayers Association	P.O.Box 1		Manorville	NY	11949
McCambridge	Josie		Poquott Civic Association	4 Harrison Avenue		Poquott	NY	11733
Morlock	Irene		Yaphank Taxpayers & Civic Association	39 Private Road		Yaphank	NY	11980
Morlock	Norma		Yaphank Taxpayers & Civic Association	11 Private Road		Yaphank	NY	11980
Murphy	Mary		Farmingville Civic Association	P.O.Box 127		Farmingville	NY	11738
			Medford Taxpayers and Civic Association	10 Royalwood Court		Medford	NY	11763
Norton	Peter		Selden Civic Association	P.O.Box 521		Selden	NY	11784

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O'Shea	Virginia		Maple Crest Civic Association	P.O.Box 321		Farmingville	NY	11738
Polsunas, Jr.	John		Strathmore Ridge Homeowners Association	P.O.Box 493		Ridge	NY	11961
Rosenbaum	Margot		Yaphank Taxpayers & Civic Association	102 Main Street		Yaphank	NY	11980
Schaefer	Janice		Mastic Beach Property Owners Association	P.O.Box 212		Mastic Beach	NY	11951
Sferrazza	Joseph		Yaphank Taxpayers & Civic Association	465 Boxwood Drive		Shirley	NY	11967
Stone	Ruth		Yaphank Taxpayers & Civic Association	10 Taylor Commons		Yaphank	NY	11980
Tria	Mark		Centereach Civic Association	P.O.Box 35		Centereach	NY	11720
Vandervoort	Grace		Civic Association of the Setaukets	P.O.Box 2432		East Setauket	NY	11733
Vignono	Valeria		Long Hill Civic	4 Catalpa Road		Stony Brook	NY	11790
			Blue Point Civic Association	4 Montauk Highway		Blue Point	NY	11715
			Brookhaven Village Association	113 Bay Road		Brookhaven	NY	11719
			Coram Civic Association	195 Skyline Drive		Coram	NY	11727
			Emerald Hills Civic Association	41 Hyde Lane		Coram	NY	11727
			North East Coram Civic Association	P.O.Box 542		Coram	NY	11727
			Gatelot Civic Association	9 Westwood Court		Lake Ronkonkoma	NY	11779
			Mastic Park Civic Association	P.O.Box 560		Mastic	NY	11950
			Miller Place Civic Association, Inc.	P.O.Box 623		Miller Place	NY	11764

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
			Baywood Property Owners Association	P.O.Box 631		East Moriches	NY	11940
			Crystal Beach Association of the Moriches	P.O.Box 101		Moriches	NY	11955
			East Moriches Property Owners Association	P.O.Box 155		East Moriches	NY	11940
			Newport Beach Property Owners Association	P.O.Box 459		East Moriches	NY	11940
			Ketcham Inn Foundation	81 Main Street		Center Moriches	NY	11934
			Mount Sinai Taxpayers for Lower Taxes	90 Shore Road		Mt.Sinai	NY	11766
			Cannan Lake Beach Community Club	125 Engelke Street		Patchogue	NY	11772
			Dunton Estates Homeowners Civic Association	620 North Duntin Avenue		East Patchogue	NY	11772
			Miramar Beach Property Owners Association	49 Fine Street		East Patchogue	NY	11772
			Bellport Beach Property Owners Association	P.O.Box 345		Bellport	NY	11713
			Swan Lake Association	86 Lake Drive		East Patchogue	NY	11772
			Comsewogue Community Council of Port Jefferson and Terryville	179 Howard Street		Port Jefferson Station	NY	11776
			Port Jefferson Station / Terry Civic Association	P.O.Box 371		Port Jefferson	NY	11776
			Port Jefferson Civic Association	P.O.Box 634		Port Jefferson	NY	11777
			Rocky Point Civic Association	Rocky Point Animal Hospital Route 25A	P.O.Box 1016	Rocky Point	NY	11778
			North Shore Beach Property Owners Association	83 Nautilus Drive		Rocky Point	NY	11778

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
			Taxpayers Civic Association of Rocky Point	P.O.Box 1042		Rocky Point	NY	11778
			Sachem East Civic	P.O.Box 2451		Ronkonkoma	NY	11779
			Shoreridge Hills, Inc.	P.O.Box 456		Shoreham	NY	11786
			Enchanted Woods Civic Association	12 Penelope Drive		East Setauket	NY	11733
			Lily Drive Homeowners Association	Lily Drive		Centereach	NY	11720
			Stony Brook Civic	22 Sands Street		Stony Brook	NY	11790
			Strathmore Homeowners Association	177 Knolls Drive		Stony Brook	NY	11790
			Strongs Neck Civic Association	25 Conscience Circle		Setauket	NY	11733
Unions								
Abbot	William	Business Manager	Plumbers and Steamfitters, Local 638	3232 48th Avenue		Long Island City	NY	11101
Duffy	Bill	Business Manager	International Union of Operating Engineers, AFL-CIO	P.O.Box 206		Farmingdale	NY	11735
Early	John	Business Manager	United Brotherhood of Carpenters, Local 45	21438 Hillside Avenue		Jamaica	NY	11427
Lindsay	Bill	Business Manager	International Brotherhood of Electrical Workers (IBEW), Local 25	370 Motor Parkway		Hauppauge	NY	11788
Lynch	Harry	Business Manager	Iron Workers Union, Local 361	89-19 97th Avenue		Ozone Park	NY	11416
McGrath	John	Business Manager	Sheet Metal Workers Union, Local 28	95 Mineola Blvd.		Mineola	NY	11501
Piscitelli	Patrick	Business Manager	International Laborers Union, Local 66	1600 Walt Whitman	P.O.Box 666	Melville	NY	11747

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
Ringhelli	Ralph	Business Manager	International Brotherhood of Electrical Workers (IBEW), Local 1049	745 Kings Highway		Hauppauge	NY	11788
Long Island Power Authority								
Kessel	Richard	Chariman	Long Island Power Authority	333 Earle Ovington Blvd		Uniondale	NY	11553
Brookhaven National Laboratory (BNL)								
Hendrey	George	Ecologist	Brookhaven National Laboratory	P.O.Box 5000	Building # 490 D	Upton	NY	11973
Lynch	Marge	Asst Lab Director/Community Involvement, Govt and Public Affairs	Brookhaven National Laboratory	P.O.Box 5000	Building # 490 D	Upton	NY	11973
Marburger	John	Director	Brookhaven National Laboratory	P.O.Box 5000	Building # 460	Upton	NY	11973
Sheridan	Thomas R.	Deputy Director for Operations	Brookhaven National Laboratory	P.O.Box 5000	Building # 460	Upton	NY	11973
Environmental and Health Organizations								
Amper	Richard	Director	Long Island Pines Barrens Society	315 E.Main Street		Riverhead	NY	11901
Arnoff	Marcia		Environmental Defense Fund - New York Office	257 Park Avenue South		New York	NY	10010
Baldwin	Carol		Breast Cancer Center					
Baird	Connie		Long Island Breast Study Project	Southside Hospital	301 E.Main Street	Bay Shore	NY	11706
Cavanagh	Ralph		Natural Resources Defense Council	40 West 20th Street		New York	NY	10011
DeLuca	Robert		Group for South Fork	P.O.Box 569	2442 Main Street	Bridgehampton	NY	11932

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
Diaz	Sylvia		Suffolk County Breast Health Partnership					
Ekstein	Jane		Save our Seashore Inc.	P.O.Box 469		Brightwaters	NY	11718 0469
Elston	Paul	Chair	New York League of Conservation Voters	130 Williams Street, Suite 801		New York	NY	12210
Esposito	Adrienne	Associate Executive Director	Citizen's Campaign for the Environment	225 A Main Street		Farmingdale	NY	11735
Flack	Brian	Staff Attorney	New York Public Interest Research Group	9 Murray Street		New York	NY	10007
Flett	Barbara		Women's Health Partnership					
Friedson	David	President	Standing for Truth about Radiation	66 Newton Lane, Suite 3	P.O.Box 4206	East Hampton	NY	11973
Kelley	Nancy		The Nature Conservancy - South Fork - Shelter Island Chapter	3 Railroad Avenue	P.O.Box 5125	East Hampton	NY	11937
Lewis	Neal		Long Island Neighborhood Network, Inc.	511 Central Avenue		Massapequa	NY	11758
Meyland	Sarah	Executive Director	Citizen's Campaign for the Environment	225 A Main Street		Farmingdale	NY	11735
Morgan	Eric	Executive Director	Long Island Group of the Sierra Club	13 W Smith Street		Amityville	NY	11701
Naning	Diane		U.S.Postal Service					
O'Kane	Debra		The North Fork Environmental Council	P.O.Box 799		Mattituck	NY	11952
Raacke	Gordian		The Citizen's Advisory Panel	P.O.Box 789		Bridgehampton	NY	11932
Rabinovitch	Paul		The Nature Conservancy of Long Island Chapter	250 Lawrence Hill Road		Cold Spring Harbor	NY	11724
Rodgers	Martha		South Fork Breast Cancer Coalition					

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
Rueter	Hillary		National Breast Cancer Coalition					
Shanklin	John		Friends of Brookhaven	1078 Route 112, Suite 282		Port Jefferson Station	NY	11776-3043
Smith	Bill		Fish Unlimited	Box 1073		Shelter Island Heights	NY	11965
Snyder	Roger	Spokes-person	The SHAD Alliance	14 Robin Drive		Huntington	NY	11743
Sprintzen	David	Executive Director	Long Island Progressive Coalition	The Katharine Smith House	90 Pennsylvania Avenue	Massapequa	NY	11758
Stone Davidoff	Linda		NY League of Conservation Voters	130 Williams Street, Suite 801		New York	NY	10038
Trip	Bill		Environmental Defense Fund - New York Office	257 Park Avenue South		New York	NY	10010
Washington	Val	Executive Director	Environmental Advocates	353 Hamilton Street		Albany	NY	12210
Warganz	Pam		Island Coalition for the Environment	P.O.Box 1137		Ronkonkoma	NY	11779
White	Michael	Chair, Long Island Branch	New York League of Conservation Voters	130 Williams Street, Suite 801		New York	NY	12210
Yelen	Rosalie		1 in 9 Breast Cancer Coalition					
			Save the South Setauket Woods	403 Pond Path		East Setauket	NY	11733
Daily Print Media								
Totter	Dean	LI Editor	New York Times					
Ain	Stuart	LI Reporter	New York Times					
Endo	Emi	Brookhav'n Town Reporter	Newsday	235 Pinelawn Road		Melville	NY	11747-4250
Fagin	Dan	Environ-mental Reporter	Newsday	235 Pinelawn Road		Melville	NY	11747-4250
Fiske	Phineas R.	Assistant Editor, Ed. Page	Newsday	235 Pinelawn Road		Melville	NY	11747-4250

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
Hadrick	Phyliss	Town/ County Gov't. Reporter	Newsday	235 Pinelawn Road		Melville	NY	11747-4250
Hovarth	Adam	Community Section News Editor	Newsday	235 Pinelawn Road		Melville	NY	11747-4250
Klurfeld	James	Editorial Editor	Newsday	235 Pinelawn Road		Melville	NY	11747-4250
Lynn	James	Editorial Writer	Newsday	235 Pinelawn Road		Melville	NY	11747-4250
Kowel	Jessica	Energy Writer	Newsday	235 Pinelawn Road		Melville	NY	11747-4250
Marro	Anthony	Editor	Newsday	235 Pinelawn Road		Melville	NY	11747-4250
Moore	Liz	Suffolk County Reporter	Newsday	235 Pinelawn Road		Melville	NY	11747-4250
Palmer	Jioni	Beat Reporter	Newsday	235 Pinelawn Road		Melville	NY	11747
Richards	Carol R.	Deputy Editorial Page Editor	Newsday	235 Pinelawn Road		Melville	NY	11747-4250
Weller	Benjamin	Local Gov't. Editor	Newsday	235 Pinelawn Road		Melville	NY	11747-4250
Tuma	Debbie		Daily News	Long Island Bureau	600 Old Country Road, #323	Garden City	NY	11530
Weekly Print Media								
Budd	Bernadette	Publisher and Editor	Community Journal	Box 619	Route 25A & Dogwood	Wading River	NY	11792-0619
Sequino	Nicole	News Editor	Brookhaven Review	127 E.Main Street	Smithtown		NY	11787
Costanza	Frank S.	Editor	The Long Island Advance	P.O.Box 780	20 Medford Avenue	Patchogue	NY	11772-0780
Sievers	Jeff	Editor	Suffolk County News	P.O.Box 367		Sayville	NY	11782

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
Tuthill	John	Publisher	The Long Island Advance	P.O.Box 780	20 Medford Avenue	Patchogue	NY	11772-0780
McCabe	Julianna	Editor	Yankee Trader	P.O.Box 710		Hicksville	NY	11802-0710
Buckell	Harry	Publisher	Yankee Trader	P.O.Box 710		Hicksville	NY	11802-0710
Barron	Jayce	Advertising Sales Manager	Yankee Trader	P.O.Box 710		Hicksville	NY	11802-0710
Desimone	Janite	Events Reporter	Yankee Trader	P.O.Box 710		Hicksville	NY	11802
MacLellan	Joey	Managing Editor	Suffolk Life Newspapers	1461 Rt.58		Riverhead	NY	11901-2004
Labarka	Joanne	General Manager	Suffolk Life Newspapers	P.O.780	P.O.Box 9167	Riverhead	NY	11901
Nester	Wayne E.	Managing Editor	Suffolk Life Newspapers	P.O.Box 9167	1461 Route 58	Riverhead	NY	11901-9167
Tuthill	John	Publisher	Suffolk Life Newspapers	P.O.Box 780	P.O.Box 9167	Riverhead	NY	11901
Willmott	David J.	Editor	Suffolk Life Newspapers	1461 Rt.58		Riverhead	NY	11901-2004
Dunsaief	Leah	Publisher and Editor	Times-Beacon-Record	P.O.Box 707		Setauket	NY	11733-0769
Kuisel	Johness	General Manager	Times-Beacon-Record	P.O.Box 707		Setauket	NY	11733-0769
Murtagh	Marie	Managing Editor	Times-Beacon-Record	P.O.Box 707		Setauket	NY	11733-0769
Cipriano	Joan	Medical/ Health Reporter	Times-Beacon-Record	P.O.Box 707		Setauket	NY	11733-0769
Sloygat	Peter	Managing Editor	Long Islander Newspapers	322 Main Street		Huntington	NY	11743-0470
Koutsis	Jim	Publisher	Long Islander Newspapers	322 Main Street		Huntington	NY	11743-0470
Stokes	John	Advertising Sales Manager	Long Islander Newspapers	322 Main Street		Huntington	NY	11743-0470

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
Media	Dolan	Publisher	Long Island Business News	2150 Smithtown Avenue		Ronkonoma	NY	11779
Walzer	Robert		Long Island Business News	2150 Smithtown Avenue		Ronkonkoma	NY	11779
Ambro	David	Editor	Mid Island News	P.O.Box 805		Smithtown	NY	11789
Paley	Bernard	Publisher	Mid Island News	P.O.Box 805				
Bridson	Susan	Editor	Three Village Herald	P.O.Box 703		East Setauket	NY	11733
Cowles III	Gardner	Publisher	Three Village Herald	P.O.Box 703		East Setauket	NY	11733
Cannon	Richard	News Reporter	Three Village Hearld	P.O.Box 703		East Setauket	NY	11733
			Island Life	456 Route 112		Patchogue	NY	11772
Wilson	Marilyn	Associate Editor	South Shore Press	P.O.Box 485		Mastic Beach	NY	11951
Fisher	Barbara	Editor	This Week	425 Smith Street		Farmindale	NY	11735
News Services								
Milton	Pat	Cor-respondent	Associated Press	Long Island Bureau	100 Supreme Court Drive, #137	Mineola	NY	11501 4815
Radio-FM								
Wojtusiak	Ray	News Director	WBEA-FM 104.7	P.O.Box 7162	249 Montauk Highway	Amagansett	NY	11930 9999
Kamitses	Aoe	General Manager	WBEA-FM 104.7	P.O.Box 7162	249 Montauk Highway	Amagansett	NY	11930 9999
Ardolina	Steve	Program Manager	WBEA-FM 104.7	P.O.Box 7162	249 Montauk Highway	Amagansett	NY	11930 9999
Camping	Harold	General Manager	WFRS-FM, 88.9	3200 Expressway Drive S.		Central Islip	NY	11722 5014
Clark	Bruce	Operations Manager	WFRS-FM, 88.9	3200 Expressway Drive S.		Central Islip	NY	11722 5014

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
Hulsebos	Craig	Program Manager	WFRS-FM, 88.9	3200 Expressway Drive S.		Central Islip	NY	11722 5014
Federman	Flo	News Director	WBZO-FM 103.1	900 Walt Whitman Road	13th Floor	Melville	NY	11747 2215
Bartsch	Jane	General Manager	WBZO-FM 103.1	900 Walt Whitman Road	13th Floor	Melville	NY	11747 2215
Martini	Rick	Operations Manager	WBZO-FM 103.1	900 Walt Whitman Road	13th Floor	Melville	NY	11747 2215
Falcone	Dennis	Program Director	WBZO-FM 103.1	900 Walt Whitman Road	13th Floor	Melville	NY	11747 2215
Perez	Mary	News Director	WLVG-FM 96.1	P.O.Box 1150	72 W.Main St.	Riverhead	NY	11901 2802
Starr	Gary	General Manager	WLVG-FM 96.1	P.O.Box 1150	72 W.Main St.	Riverhead	NY	11901 2802
Rybak	Stefan	Program Director	WLVG-FM 96.1	P.O.Box 1150	72 W.Main St.	Riverhead	NY	11901 2802
Chiarelli	Peter	Advertising Sales Manager	WLVG-FM 96.1	P.O.Box 1150	72 W.Main St.	Riverhead	NY	11901 2802
Kahn	Mal	Program Director	WBAZ-FM 101.7	44210 County Road #48		Southold	NY	11971 5032
Cohen	Carol	News Assignment Editor	WBAB-FM, 102.3	555 Sunrise Highway		West Babylon	NY	11704
Wellman	Eric	Program Director	WBAB-FM, 102.3	555 Sunrise Highway		West Babylon	NY	11704
Davis	Danielle	News Director	WBAB-FM, 102.3	555 Sunrise Highway		West Babylon	NY	11704
Guthrie	Kim	GM & Program Director	WBLI-FM, 106.1	3090 Route 112		Medford	NY	11704
Fishon	Eric	News Director	WBLI-FM, 106.1	3090 Route 112		Medford	NY	11763 1499
Radio-AM								
Weber	George	News Assignment Editor	WABC-AM, 770	2 Penn Plaza, 17th Floor		New York	NY	10121 0085
Vaughn	Donna	News Assignment Editor	WALK-AM, 1370	P.O.Box 230	66 Colonial Drive	East Patchogue	NY	11772 5800

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
Edwards	Bill	General Manager	WALK-AM, 1370	P.O.Box 230	66 Colonial Drive	East Patchogue	NY	11772 5800
Michaels	Gene	Program Director	WALK-AM, 1370	P.O.Box 230	66 Colonial Drive	East Patchogue	NY	11772 5800
Miller	Rob	Assistant Program Director	WALK-AM, 1370	P.O.Box 230	66 Colonial Drive	East Patchogue	NY	11772 5800
Brinka	Frank	News Director	WHLI-AM, 1100	1055 Franklin Avenue		Garden City	NY	11530 4886
Widmer	David	General Manager	WHLI-AM, 1100	1055 Franklin Avenue		Garden City	NY	11530 4886
Anthony	Dean	Program Director	WHLI-AM, 1100	1055 Franklin Avenue		Garden City	NY	11530 4886
Ellsworth	Jack	GM & Program Director	WLIM-AM, 1580	Woodside Avenue		Patchogue	NY	11772 1499
Drake	George	News Director	WLIM-AM, 1580	Woodside Avenue		Patchogue	NY	11772 1499
Television								
Baxter	Tony	Assistant Program Director	WNLY-TV, Channel 55	P.O.Box 5055	270 S.Service Road	Melville	NY	11747 2334
Beylea	Rick	News Director	WNLY-TV, Channel 55	P.O.Box 5055	270 S.Service Road	Melville	NY	11747 2334
Butler	Art	Environmental Reporter	News 12 Long Island	1 Media Crossways		Woodbury	NY	11797 2062
Cass	Terrel	General Manager	WLIW-TV Channel 21	P.O.Box 21	303 Sunnyside Blvd	Plainview	NY	11803
Chaurin	Marvin	Program Director	WNLY-TV, Channel 55	P.O.Box 5055	270 S.Service Road	Melville	NY	11747 2334
Colier	Lauren	General Manager	WHSI-RV Channel 67	P.O.Box 609		Central Islip	NY	11722 0609
Dollard	Terrence	Programming Manager	Brookhaven Cable TV	Industrial Road		Port Jefferson Station	NY	11776
Donlan	Patrick	News Director	News 12 Long Island	1 Media Crossways		Woodbury	NY	11797 2062
Eckhardt	Ken	News Director	LI News Tonight	New York Institute of Technology	Education Hall	Old Westbury	NY	11568

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
Feinblat	David	General Manager	WNLY-TV, Channel 55	P.O.Box 5055	270 S.Service Road	Melville	NY	11747
Funkhouser	Chris	Program Director	WLIW-TV Channel 21	P.O.Box 21	303 Sunnyside Blvd	Plainview	NY	11803
Kelly	Mary Ellen	News Coordinator	News 12 Long Island	1 Media Crossways		Woodbury	NY	11797-2062
Kohler	Peter	Director, Editorial Services	Cablevision	1111 Stewart Avenue		Bethpage	NY	11714-3581
Rabey	Mary	News Director	WLIW-TV Channel 21	P.O.Box 21	303 Sunnyside Blvd	Plainview	NY	11803
Richards	Doug	News Assignment Editor	News 12 Long Island	1 Media Crossways		Woodbury	NY	11797-2062
Savini	Laura	Public Service Director	WLIW-TV Channel 21	P.O.Box 21	303 Sunnyside Blvd	Plainview	NY	11797 2062
Scott	Drew	News Assignment Managing Editor	News 12 Long Island	1 Media Crossways		Woodbury	NY	11797 2062
Zaher	John	Local Progr'ng. Director	Brookhaven Cable TV	Industrial Road		Port Jefferson	NY	11776
Team Members								
Bowman	Diane		ANP	10000 Memorial Drive	Suite 500	Houston	TX	77024
Charlebois	Robert		ANP	65 Boston Post Road	Suite 300	Marlborough	MA	01752
Cleveland	Jonathan		Capers Cleveland	3 Boylston Place	3rd Floor	Boston	MA	02116
Ferruggiari	Brian	Asst. Vice President	Todd S.Shapiro Associates, Inc.	1393 Veterans Memorial Highway, Suite 403S	P.O.Box 5246	Hauppauge	NY	11788
Fitzpatrick	Joe		ANP	65 Boston Post Road W	Suite 300	Marlborough	MA	01752
Flick	Mike		ANP	10000 Memorial Drive	Suite 500	Houston	TX	77024
Garcia	Carmina		ANP	10000 Memorial Drive	Suite 500	Houston	TX	77024

Last Name	First Name	Title	Affiliation	Address 1	Address 2	City	ST	ZIP
Jordon	Todd		Capers Cleveland	3 Boylston Place	3rd Floor	Boston	MA	02116
Kompass	Dan		Cape Cod Internet	845 Main Street		Osterville	MA	02655
Przybyla	Michael	Spatial Analyst	Earth Tech	196 Baker Avenue		Concord	MA	01742
Shapiro	Todd		Todd S.Shapiro Associates, Inc.	1393 Veterans Memorial Highway, Suite 403S	P.O.Box 5246	Hauppauge	NY	11788
Solzhenitsyn	Stephan	Envr'tal Planner	Earth Tech	196 Baker Avenue		Concord	MA	01742
Sloane	David	Attorney	Mars Sloane Conlon	1770 Motor Parkway	Suite 200	Happauge	NY	11788-5260
Wiecek	Paul		ABB Alstom Power	5309 Commonwealth Centre Parkway		Midlothian	VA	23112
Zimmerman	Robert		Zimmerman Edelson, Inc.	5 Bond Street	Suite 1	Great Neck	NY	11021

APPENDIX E

MEETINGS HELD TO DATE

Meeting Date	Organization and Contact Persons
1/19/00	Cablevision/New 12 Long Island Peter Kohler, Director Editorial Services
1/19/00	Long Island Association Mitchell Palley, Government Relations Director
1/20/00	Long Island Advance Frank S. Costanza, Editor
1/20/00	Newsday Phineas R. Fiske, Assistant Editor, Editorial Page James Lynn, Editorial Writer Carol R. Richards, Deputy Editorial Page Editor
2/1/00	Suffolk Life Newspapers David J. Wilmott, Editor Wayne E. Nester, Managing Editor
2/4/00	Suffolk County Department of Health Services Alexander Santino, P.E., Chief, Office of Pollution Control and staff
2/8/00	Yaphank Taxpayers & Civic Association Nanette Essel, President Russ Behrens, Member Karl Berger, Member Fran Hurley, Member Charlotte Jacob, Member Emily Karlovits, Member Irene Morlock, Member Norma Morlock, Member Margot Rosenbaum, Member Joseph Sferrazza, Member Ruth Stone, Member
2/8/00	Affiliated Brookhaven Civic Organization Connie Kepert, President
2/8/00	Suffolk County Department of Planning George Gatta, Deputy County Executive Andrew Freleng, AICP, Principal Planner

2/8/00	Long Island Regional Planning Board Dr. Lee E. Koppelman, Executive Director
2/8/00	Wastewater Management and Pretreatment, Suffolk County Department of Public Works Richard Strzepek, Director William McBrien, Suffolk County Sewer Agency and staff members
2/9/00	Robert Walzer, Editor Long Island Business News
2/16/00	New York State DEC, Region One John Pavacic, Regional Permit Administrator Roger Evans, Environmental Analyst Member of DEC Region One Staff
2/18/00	New York State DPS and DEC John Smolinsky, Chief, Environmental Certification and Operations Members of DPS Staff William Little, Associate Attorney at DEC Office of General Counsel
3/9/00	Erica Bowers, Reporter Ronkonkoma Review
3/9/00	Assemblywoman Debra Mazzarelli
3/9/00	Suffolk County Legislator Fred Towle and aide Suzanne Kappel Henry
3/10/00	New York State Senator Ceasar Trunzo and aide Marc Vogl
3/10/00	New York State Senator Kenneth LaValle and aide Marge Rothwell

APPENDIX F

QUESTIONS POSED AT MEETINGS

Questions Posed at Initial Meetings

1/19/00 News 12 Long Island

Is the project located near a school district? Which one?

Is this a base load facility?

What is the relationship with LIPA?

What are the greatest benefits?

What are the potential obstacles?

Will there be any noise?

1/19/00 Long Island Association

Does the Town of Brookhaven support this project?

Does the Project abut the L.I.E.?

Can the plant grow larger?

1/20/00 Long Island Advance

Where are ANP's other power plants?

Why is this facility needed on Long Island?

Why site this facility in Brookhaven?

Who owns the property where you are going to site this facility?

What are the benefits?

Have you contacted the Town of Brookhaven?

What is the size of the facility?

What federal agency will regulate your facility?

1/20/00 Newsday

Where are other ANP plants in Massachusetts?

What will be the backup fuel?

Where is the closest community and school district?

What is the total cost of this Project?

Who are your customers going to be?

How does your plant compare with the NYPA plant in Holtsville?

Have you met with Town Supervisor Grucci?

In which countries does National Power have plants?

Have you talked with LIPA?

2/1/00 Suffolk Life Newspapers

Who owned the property?

Would you compare this facility to other facilities?

Will the Project use blended fuel?

Will there be noise coming from the plant?

What does the Town's noise ordinance state?

What is the largest complaint to expect during the permitting process?

Why site this facility in Brookhaven?

Where does the electricity go?

What is the time line for the project?

What is ANP's track record?

Can the local sewer districts handle the discharge of water form this plant?

Are all permits under the Article X process?

What are the benefits?

What is the holding capacity for oil stored on-site?

How close is the Carman's River?

2/4/00 Suffolk Department of Health Services

What chemicals will be stored at the project?

Will backup fuel oil be used? If so, how much storage?

What is the anticipated water use?

Will Yaphank Sewer Treatment Plant accept the process wastewater?

2/8/00 Yaphank Taxpayers & Civic Association

Why did your company choose this particular site?

Is there a threat of gas explosions?

Will homeowners benefit from lower utility rates?

Will homeowners be able to choose whether to buy your power?

How big will the actual facility be? Can you expand the facility?

How high will the stacks be?

Will property values decline if the Project is visible?

What are some Project benefits?

What will the emission rates be?

What will the tax revenues be and when do tax benefits begin?

Is the site layout set 'in stone'?

How will the local wind patterns affect the emissions?

Will this project harm the groundwater?

Can the project be moved back on the project site?

2/8/00 Long Island Regional Planning Board

Will this project lead to more competitively priced electricity?

Why not stay with the status quo?

Would a new pipeline be difficult to build?

Does the regulatory process require local approval?

What is the project timetable?

Will there be a multi-lingual analysis?

2/8/00 Suffolk County Department of Planning

How much oil would be stored on-site as a back-up fuel?

What is the distance of the Project to the nearest residences?

Will the transmission lines be owned by LIPA?

What is the time frame?

2/8/00 Suffolk County Department of Public Works

What is the expected peak and average volume of wastewater?

What raw water source will Project use?

What are the anticipated constituents of the wastewater?

Will connection be via a force main or gravity sewer?

Can discounted electricity be made available to public facilities such as those of Suffolk County?

2/9/00 Affiliated Brookhaven Civic Organization

Are there any other companies planning to site plants in Brookhaven?

For what geographic area will the electricity be generated?

Where does the power go?

What are the environmental impacts of air, noise and stack height?

Is there a backup fuel?

2/9/00 Long Island Business News

Why Brookhaven, instead of another location?

What is the first step in the regulatory filing process?

2/16/00 New York State DEC, Region One

Does the Project propose a new well?

What are the proposed emission rates?

Is the Project outside (a) the WSR zone? (b) a floodplain area? (c) the Central Pine Barrens?

What is the vegetation cover type on the site?

What routes will be used for deliveries?

What community/environmental groups has applicant contacted?

What is the planned stormwater discharge system?

Will project store more than 400,000 gallons of fuel oil?

What are the proposed water and wastewater concepts?

Does applicant anticipate odors?

2/18/00 New York State DPS Staff and DEC

Will applicant use direct mail?

Will applicant ensure that there is ample notice of draft stipulations for review?

What community/environmental groups has applicant contacted?

What media have been contacted, and is the Project publicly announced?

What is the anticipated licensing timeline?

Will applicant negotiate stipulations defining the scope of the application?

Will backup fuel be used?

Has applicant entered into agreements with Brooklyn Union Gas?

Has applicant submitted a scope of study to the transmission system operator?

Will there be interconnects?

What are the proposed water and wastewater concepts?

3/9/00 Ronkonkoma Review

How many plants does ANP operate?

How long will it take until this plant is operational?

Have their been any concerns voiced?

What will your prices of electricity be?

How much will this project cost to build?

Why did you choose this site?

How much power does this plant generate and how many people will it serve?

Are there any environmental concerns?

3/9/00 Assemblyman Mazarelli

Who have you met with in the local area?

Have you met with the school superintendent?

3/9/00 County Legislator Towle

Why did you choose this site?

What is the size of the site?

Will you own the site?

Which local groups have you met with?

What will be the impacts?

3/10/00 Senator Trunzo

Will you lower electric rates?

Where does ANP operate other plants?

3/10/00 Senator Lavalle

Who have you talked to in the local area?

How high will the stacks be?

What is the timeline for the project?

How much tax revenue will you generate?

APPENDIX G

NEWS STORIES

THE LONG ISLAND Advance

128th Year, No. 22 THURSDAY, January 27, 2000 75¢

Power plant slated for Yaphank?

Energy company wants to build gas-powered plant in Brookhaven Town

By Frank S. Costanza

A United Kingdom-based energy company is currently investigating whether to build a new, $300 million gas-powered power plant on a 25-acre plot located off Sills Road in Yaphank.

American National Power (ANP), a subsidiary of UK's National Power PLC, wants to construct a plant capable of producing 580 megawatts of electricity, enough juice to supply up to 500,000 Brookhaven residents, according to ANP's Vice President of Project Development Robert Charlebois.

ANP officials expect that the Yaphank plant, which has a proposed start-up date of 2004, will provide cheaper electricity rates than those currently offered by the Long Island Power Authority (LIPA), Long Island's main power source, Charlebois said.

"We wouldn't be investing in excess of $300 million if we didn't think we could offer competitive electricity rates," he said. "We think we can provide cheaper power rates than what currently exists on Long Island."

ANP officials are currently negotiating the purchase of 25 acres of undeveloped land, located in a Yaphank industrial zone, from Patchogue-based Sills Road Associates. The plot, on which the several hundred thousand square foot plant would be built, is located on the southeast corner of the Sill Road intersection with the Long Island Expressway, just off of exit 66.

All of the company's federal, state, county and town permits, a process that may take in excess of 26 months to complete, must be acquired before ground can be broken on the proposed plant. Company officials plan to meet with Brookhaven civic groups and private residents who may be impacted by the power source, before bringing their proposal before the town board, Charlebois noted.

Brookhaven officials, who have not received an application from the company, declined to comment about the proposed power plant.

Several local civic groups plan to meet with ANP officials in the next several weeks to review plans for the gas-powered facility. While many civic

Please turn to page 29

Power plant slated for Yaphank?

Continued from page 1

leaders contacted by *The Advance* expressed interest in the proposal, most said they would first want to review site plans and discuss the potential environmental impact on the Yaphank area.

"There's a lot of issues that we would have to look at in addition to impact on the environment and local traffic," said Nanette Essel, co-president of the Yaphank Taxpayers and Civic Association.

"They're appealing if they want to offer lower electric rates," said Les Carmichael, president of the Bay Area Civic Association, based in Mastic. "But if they're looking for support to build something, there's a lot of questions that still need to be answered."

Once operational, ANP juice will be sold to town residents via Independent System Operators (ISOs), which effectively serve as electricity retailers, Charlebois said. ANP officials are confident that the ISOs, which may include several dozen retailers, will help reduce overall electricity costs in Brookhaven Town.

The concept of an ISO offering electricity as an alternate to LIPA is not an unusual occurrence on Long Island. The Village of Greenport in Suffolk County, and the Villages of Freeport and Rockville Centre, do not use LIPA electricity. Although they have a small power plant, called the Greenport Electric Company, village officials buy most of their juice needed for Greenport's 2,000 residents from the New York Power Authority (NYPA), according to Steven Brautigam, Greenport's Deputy Village Clerk Treasurer.

"Our allotment is 5,240 kilowatts per month," Brautigam said. "As things stand now, we offer our residents power 40 percent cheaper than LIPA. We're going to raise our rates 10 percent in March, but we'll still be 30 percent cheaper."

"I think any competition is good," he added.

ANP, meanwhile, is eager to meet with local residents and civic groups to formulate a "wish list" for the proposed plant. "We want to get the ball rolling on this as soon as possible," Charlebois said.

According to officials, the plant would be painted neutral earth-tones to blend with the surroundings, and its stack height would not exceed 180 feet. The plant would also meet required noise limitations. The nearest homes are located approximately 2,000 feet from the Yaphank site.

The Brookhaven plant will employ approximately 25 full-time jobs during operation, and be an significant contributor to the town's tax base, Charlebois said.

ANP operates a similar power plant in Milford, Massachusetts, with another two, 580 megawatt operations currently under construction in the New England state. The company has also begun construction on a 2,600 megawatt plant in Texas.

National Power PLC currently generates more than 30,000 megawatts of electricity worldwide, with power plants located in the United Kingdom, Australia, Portugal, Pakistan and Turkey. ■

Feb. 4, 2000
Long Island Business News

American Power to plug in LI

By ROBERT WALZER
Business News Staff Writer

Energy plant developer American National Power plans to build a $300 million gas-fired generator in the Town of Brookhaven, a facility it said would compete with older, less efficient generators owned by KeySpan Energy.

The 580-megawatt plant would be built near Yaphank on a 25-acre parcel of industrial-zoned land it has leased from Sills Road Associates with an option to buy. The developers are now undergoing the lengthy process of seeking regulatory approvals, including applying to the New York State siting board, and hope to start construction by late 2001, finishing two years later.

"Existing generation on Long Island is old and ineffective," said Robert J. Charlebois, the American National vice president managing the Brookhaven project.

"We would replace some of that with much more efficient and clean generation. And rates here are among the most expensive in the country. We want to introduce competition with low cost energy."

See POWER, Page 30A

POWER

Continued From Page 1A

American National's bid comes as deregulation eases the entry requirements for such independent operators. Since November, the New York Independent System Operator has controlled the buying and selling of electricity through a real-time electronic commodities market open to all.

Meanwhile, KeySpan, which owns the majority of the Island's 4,000 megawatts of generation, plans its own new plants. "We may build anything from a 75 megawatt to a 250 megawatt plant on Long Island that would compete with any new power plant construction," said Bob Mahoney, KeySpan spokesman.

Further, LIPA, which owns electricity transmission and distribution here, has already licensed two energy service companies to sell electricity through its Long Island Choice program, which will gradually expand.

American National would sell to such independent operators, who would in turn sell to commercial customers, residences and on the open market through the ISO. The project's feasibility stems from Long Island's approximate 2 percent-a-year growth in electricity demand and its existing peak shortage.

"There is need for a substantial amount of capacity on Long Island," said Harry Davitian, president of Entek Power Services, a consultant and power developer in Setauket. "At current rates, load growth alone will add 100 to 200 megawatts per year to demand. We are already deficient in supply today."

That same shortage led LIPA to issue a request for proposals for three new 75-megawatt plants. It also hopes to build an underwater cable that would connect the Shoreham plant to Connecticut. Other Long Island projects are expected, too, including an up-to-150-megawatt plant being commissioned by Freeport, which works outside LIPA's system.

American National, a Texas-based subsidiary of National Power PLC, a British electricity generating company that owns and operates 30,000 megawatts of capacity, is now developing an 1,100 megawatt gas facility in Ramapo, N.Y. This would be its first on Long Island.

American National would develop the project at its own risk, financing it internally and through bank loans, Charlebois said. He asserted that the gas-burning plant is environmentally cleaner than most existing LIPA plants, emitting less sulfur dioxide, carbon monoxide and other compounds.

"The newer units would have much lower operating costs while providing a major clean air benefit," by displacing power that would be generated from older units, Davitian said.

Brookhaven, for its part, supports the project for the tax benefits it will reap and the 700 construction jobs and several dozen permanent jobs it will provide.

"It will infuse significant dollars into our tax base for our local schools, libraries and fire districts," said Jesse Garcia, a spokesman.

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SUFFOLK LIFE
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Power Plant For Brookhaven?

By Wayne W. Nester

Brookhaven has long been noted as a power base in Suffolk politics, but American National Power (ANP) has its way, it will become a true power base, generating 580-megawatts of electricity for the town's municipal facilities as well as area businesses.

ANP, a wholly-owned subsidiary of the United Kingdom corporation, National Power, is proposing to erect a natural gas-fired, air-cooled power generation facility on 25 acres of property located south of the Long Island Expressway at exit 66 and along the southeast corner of Sills Road in Yaphank. According to ANP officials, the actual buildings would encompass approximately three acres on the parcel.

The company has been looking at 18 sites across New York State, including five properties on Long Island. ANP refined its short list down to two or three parcels of which the Brookhaven site best met their criteria.

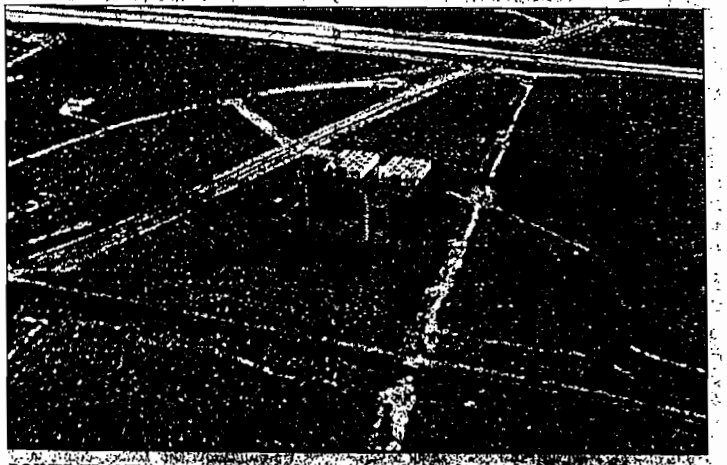
ANP has identified a market niche for its plants in areas where deregulation of utility rates has occurred. It is currently in various phases of implementation or construction of a small handful of power plants around the country. There were several factors key in its decision to locate the first Long Island-based power plant in Brookhaven. The availability of gas supplies to feed the turbines which create the electricity; water sufficient enough to cool the turbines — approximately 30,000 gallons a day; properly zoned land adjacent to major re ways, yet not in close proximity to resi-de ial areas; and a competitive market place all made the site attractive.

The Yaphank parcel filled the bill in all areas, according to Robert J. Charlebois, ANP vice-president of project development. "At present, Long Islanders are paying the most expensive retail rates in the country for power. We hope to introduce competition to Long Island," he said, "Our facility will have no stress on the local or host community and no large traffic loads on area roadways," he said.

During the construction phase, as many as 700 workers will be on the site. Charlebois said that upon completion of the facility, only 25 employees will be actually stationed at the power plant on a daily basis.

According to ANP engineers, the plant uses the latest state-of-the-art equipment that enables the facility to be cost efficient, price competitive and environmentally friendly.

SEE Page 8



POWER PLANT — A drawing of a proposed natural gas fired, air-cooled power generation facility on 25-acres of property located south of the Long Island Expressway, at exit 66 and along the southeast corner of Sills Road in Yaphank.

Power Plant...

FROM Page 3

"Emissions, water consumption, noise levels and visual impacts are all better than oil-fired power plants. The differences are remarkably clear," Charlebois claimed.

While the $300 million facility will produce less noise than any other power plant currently operating on Long Island, it may not produce cheaper electric rates for homeowners. The actual retail component of selling the power produced at the plant will be handled by an independent sales and marketing firm. ANP would contract with a third-party vendor who would then go out to secure contracts for power. The prime customers would be large users of electricity, such as manufacturing facilities or municipalities. Whatever energy remains, could be marketed on a retail level but it is unlikely, at this point, that individual homeowners would be able to buy into the power.

If approved, Charlebois said that actual construction of the plant is still "several years off."

The company is currently engaged in an aggressive public relations strategy to reach out to all interested parties, including town officials, civic groups, the interest in this project.

From the town perspective, ANP would be seeking some tax relief in the form of PILOT payments to the town in lieu of taxes, although Charlebois stated he expects the plant to be a "full and fair" taxpayer in the town of Brookhaven and its taxing districts.

Supervisor Felix Grucci did not return repeated calls to his office for comment on the project.

WEST ISLIP
SUFFOLK LIFE
NEWSPAPERS

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Let There Be Competition

Recently, Suffolk Life reported that American National Power (ANP) plans to build a 580-megawatt electrical generating plant in Yaphank. This plant will be gas fired and produce clean electricity. The power will not be sold directly to consumers; it will be sold to independent system operators or directly to utilities. The plants are called merchant plants.

ANP will fund the entire operation, betting on the concept that they can generate electricity more economically than standard utilities.

KeySpan currently owns and contracts the major portion of the generating capacity on Long Island. The utility uses a combination of old technology: oil-fired plants burning number two and number six fuel oil. The burning of fuel oil adds substantially to the pollutants being discharged into the air. Other KeySpan generating plants burn natural gas but are saddled with inherent costs that were built in before the days of deregulation.

ANP facilities should be a substantial contributor to the tax base in Brookhaven as well as Suffolk County and should be particularly important to the Longwood school district.

The organizers make a good case that their power plants will be environmentally compatible and aesthetically pleasing. All of the financial risk for this venture is theirs. They will not be able to come back to the ratepayers if they have miscalculated and the costs are higher than originally anticipated.

At first blush, these merchant plans appear to be a win-win situation for Long Islanders. There will be competition. KeySpan, which supplies LIPA with the majority of its power, will have to be as competitive as American National Power or it will lose its favorite son position. Competition can only benefit the consumers.

And why not?

Newsday
THE LONG ISLAND NEWSPAPER

Bid to Build New Power Plant in Yaphank

By Emi Endo
STAFF WRITER

In a bid to compete with Long Island's aging power plants, a Houston-based company wants to build a large natural gas-fired plant in Yaphank.

American National Power, a subsidiary of a global electricity generating company, is proposing a $300 million plant capable of producing 580 megawatts.

"We're interested in introducing competition to Long Island," said Bob Charlebois, a company vice president who is managing the project. "We're of the view that we can produce electricity more cheaply, more efficiently and more cleanly than most of the [plants] currently operating on the Island."

Bob Mahony, a spokesman for KeySpan Energy, said that KeySpan was also considering building a new 250-megawatt natural gas-fired plant. "The plants we're proposing will be competitive with the other plants that will be proposed," he said.

American National Power is hoping to construct the plant on a 25-acre site at the intersection of the Long Island Expressway and Sills Road. Such a plant is permitted on the property, which is zoned industrial. But in addition to site plan approval from the Town of Brookhaven, the company needs approval from the state.

Charlebois described the plant as "using the latest technology that's available in the generation world." "It's extraordinarily efficient and very clean," he said.

The plant would run at 60 percent efficiency, compared to about 35 percent for other plants, and would produce nearly twice the electricity per unit of fuel burned, he said. "If you think about efficiency like miles per gallon in a car, we get better miles per gallon with this project," Charlebois said. "It takes less natural gas to produce more megawatts."

The plant would be designed to meet the lowest achievable emission rate and blend in with the surrounding environment, with building height limited to 180 feet.

"Under deregulation, the power will be bid to the independent system operator and then the independent system operator will dispatch it," Charlebois said. He said the company could also sell the power to third parties such as marketers, the Long Island Power Authority and municipalities.

Representatives of the company, who met with Brookhaven town officials informally, are launching a community outreach effort. "We're interested in speaking to as many stakeholders as possible to describe to them the project," Charlebois said. He said a document describing details of the project would be released in March and a local liaison committee would be created.

If all goes according to plan, the company hopes to begin construction by the end of 2001.

Jesse Garcia, chief of staff to Brookhaven Supervisor Felix Grucci Jr., said, "we're looking at it positively" for several reasons. He said the proposed site is zoned industrial, the project would provide jobs and it would "add several million dollars to the tax base to the Longwood School District.

NEWSDAY, SUNDAY, FEBRUARY 20, 2000

The New York Times

Sunday, March 19, 200(

Long Island

Section 14

X in Electricity Equation: a Non-LIPA Plant

By STEWART AIN

THE promise of a Texas company to generate electricity on Long Island more efficiently, with less pollution and at lower cost is receiving generally positive reviews from the Long Island Power Authority and business leaders. Residents near the proposed site are more cautious.

The company, American National Power, wants to build a gas-fired power plant on a vacant 25-acre plot just south of the Long Island Expressway at Exit 66, in Yaphank. The facility, which could generate 580 megawatts of electricity, would be the first built on the Island by any company other than the local utility. Construction is proposed to begin next year, with completion in 2003.

"I think it's an exciting idea," said LIPA's chairman, Richard M. Kessel. "There is obviously a huge need for energy on Long Island, and if this plant was built, it might help us fill out the picture of how we would meet that demand."

The Brookhaven Town supervisor, Felix Grucci Jr., said the proposal "is in concert with what I have been requesting — alternative and competitive power on Long Island that may bring lower electric rates to the town and all of Suffolk."

The electricity would be "significantly less expensive" than that generated by plants owned and operated by KeySpan Energy, according to Robert J. Charlebois, vice president of American National Power.

KeySpan is currently the only company on Long Island that generates electricity for LIPA. It was created in May 1998 when the Long Island Lighting Company was dissolved and LIPA assumed control of its electric transmission and distribution lines and KeySpan took control of its five power plants.

David J. Manning, senior vice president of KeySpan, acknowledged that "any new generating plant built today will use the most current gas-fired turbine technology." Keyspan's plants were initially oil-fired but were converted to allow them to burn primarily natural gas and now, Mr. Manning said, KeySpan is considering upgrading them.

Mitchell Palley, a vice president of the Long Island Association, said: "This proposal is what energy deregulation means — the ability of private companies to come in, build power plants and sell electricity at less than current suppliers. If it meets community needs, it is something we would support."

Mr. Kessel noted that LIPA buys nearly all of its electricity from KeySpan. It is able to import no more than 1,200 megawatts of electricity through five connections with suppliers off the Island.

On a very hot day, energy demand can reach 4,200 to 4,300 megawatts. Last July 6, in the middle of a heat wave, the demand reached a record 4,590 megawatts. The system's maximum capacity is 5,100 megawatts.

Bert J. Cunningham, LIPA's vice president for communications, noted that demand had increased 3.5 to 4 percent annually in the last three or four years and that it is expected to continue that pace.

Mr. Kessel said that he had met with Mr. Charlebois and that LIPA is now discussing integrating the electricity generated at Yaphank into the utility's grid.

To help meet energy demands this summer, LIPA awarded KeySpan Energy Construction, a KeySpan subsidiary, a $67 million contract on Feb. 29 to string a 138-kilovolt cable from Riverhead to Southampton by June. Energy demand on the East End has been rising sharply because of housing construction there.

Mr. Cunningham also noted that the utility should be awarding contracts soon to companies that bid on a proposal to build two or three power plants that would generate a total of 225 megawatts of electricity. "The companies would build the plants at their own expense and sell the electricity to us exclusively," he said.

Another request for a proposal (R.F.P.), to lay a 600-megawatt cable under the Sound from New Haven to Shoreham, has been modified, he said, to reduce the initial capacity to 200 to 300 megawatts, but with the possibility of adding a second cable.

"We are looking for flexibility in bringing electricity from off the Island," Mr. Cunningham said. "We felt from the information we developed through the first R.F.P. process

The New York Times

that it was better to look at different types of cable technologies and perhaps multiple cables."

Mr. Charlebois said his proposed plant would be a "viable alternative" to the cable. But Mr. Kessel pointed out that if the underwater cable were approved, it would be operational in 2002. The proposed power plant, even if it were built on time, would not be running until 2003.

A decision on the cable will be made by June, Mr. Kessel said. He added that he is confident that even if the cable project is approved, growing demand for power will make the American National Power project a necessity.

Mr. Charlebois put the cost of the Yaphank project, including the land, at about $300 million.

"One of the reasons we like this site is that the closest residence is about 2,000 feet away," he said. "The plant would be south of the Long Island Expressway at the intersection with Sills Road, and the majority of the homes are north of the expressway."

He noted that he has met with some civic leaders and will be sending letters to about 5,000 residents who live within two miles.

"We're interested at the end of the day in designing a project that is as satisfactory as possible," he said. "We are not going to go to areas where we are not welcome."

Connie Kepert, president of the Affiliated Brookhaven Civic Organizations, said that in her meeting with Mr. Charlebois, he promised to come back in the spring with more detailed information about the project's economic and environmental impact.

"It certainly is important to bring competition to Long Island as far as electricity is concerned," she said. "So this is a good thing. But we want to make sure that there are no environmental concerns that become a burden to the town. I know there will be an oil storage facility on the site and I'm concerned about water and air quality. I'd like to see a little more information."

Nanette Essel, co-president of the Yaphank Taxpayers and Civic Association, which represents the neighboring homeowners, raised those same concerns, saying: "It is premature to comment before we have seen all the facts. The devil is in the details and we haven't seen any, so we have to be cautious and wait."

In its literature, American National Power writes that the project would use "clean-burning natural gas, highly efficient electricity generating technology and cutting-edge pollution-control and water-minimization equipment.

"The plant will be designed to meet the Clean Air Act's 'lowest achievable emission rate' and 'best available control technology' standards," the statement continues. "Because of air-cooling technology used at the plant, the generation of a vapor plume will be almost nonexistent."

Mr. Charlebois said the plan calls for two smokestacks no higher than 180 feet. And he said the company would "maintain as much visual buffer as possible." He said also that there would be no odors and that the noise from the generator turbines would not be heard 2,000 feet away.

American National Power estimated that 700 jobs would be created for the construction of the power plant and that another 25 full-time operators would be needed once it is erected.

Supervisor Grucci said that in addition to creating jobs, the project would add millions to the tax base, with much of it going to the Longwood School District.

"At this point the proposal is in front of us, and when the plan becomes more real, the town will look at it," he said. "But it is very much in concert with what we trying to do." ■

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The power of deregulation

Energy firms race for a taste of Long Island's new electric pie

By ROBERT WALZER
Business News Staff Writer

LONG ISALND – New York's recent electricity deregulation has prompted a frenzy of plant proposals for Long Island, as six companies attempt to build as many as 23 energy plants with 7,000 megawatts, enough zip to power three counties the size of Nassau or Suffolk.

Among the would-be developers, in order of the number of megawatts proposed, are PPL Corp., KeySpan Energy, Caithness Energy, American National Power and AES Long Island.

If built, the plants would represent at least $5 billion in new investments. Yet despite a peak power shortage on Long Island, energy growth of 2 percent a year and inefficient plants as old as 48 years, no one expects all those plans to be realized.

"This happens in every region that deregulates," said Robert J. Charlebois, a vice president of American National, which has proposed a 580-megawatt plant in Yaphank. "At the end of the day, any rational player will conclude

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TRUCKING: Freeport is one of several areas looking for power deals.

LIPA rethinks its cable plan

By ROBERT WALZER
Business News Staff Writer

The Long ısland Power Authority has canceled its request for bids to build a $180 million, 600-megawatt underground cable to Shoreham from Connecticut, and will instead seek the construction of two cables, each half the original size.

After canceling the cable bid on Feb. 29, LIPA's board last week sent out new project criteria to 14 potential bidders for which participants must respond

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POWER

Continued From Page 1A

that the market can only absorb a percentage of those megawatts. Clearly, we think it can absorb ours."

Nonetheless, the sheer number of proposed plants heralds a fierce race. Long Island's immediate peak electricity shortage will be breached by two 300-megawatt underwater cables and three 75-megawatt generators proposed by the Long Island Power Authority. Those are all scheduled to be operating by 2003 with at least one as early as next year, LIPA said.

Only a limited number of additional plants will make the grade. "I would suspect if (PPL) got one or two out of those seven or eight they would be thrilled, and the same is true for KeySpan," said Rich Bolbrook, LIPA's vice president of power markets.

Developers of the remaining 19 projects are betting that the lofty price tag of their mostly gas-burning plants will be offset by big cuts in the cost of generation. "If you could produce energy at a lower cost and displace the higher cost of energy there's a market for it," said Howard Kosel, KeySpan's vice president of generation operations.

Bolbrook said the new plants "should have a downward pressure on rates," particularly for the commercial customers their developers will target as customers. Unlike KeySpan's contractual arrangement obliging it to offer its electrical output to LIPA for 15 years, the new generation will come from "merchant" plants, that is free market operators selling to the highest bidder.

Hicksville-based KeySpan, which as the owner of most of Long Island's existing 4,000 megawatts of electric generation so is in a better position than most to understand the cost structure, is proposing another eight plants with 1,045 megawatts.

But the benefits of Long Island's power market appear to also be clear to PPL, which is aggressively competing in deregulated energy markets across the United States. The Pennsylvania utility has proposed 1,900 megawatts in seven projects – an implied investment of up to $1.5 billion – including a 100-megawatt project for Freeport Electric, an independent municipal power company. Freeport said it's evaluating the proposal.

"We're looking at different sites for feasibility reasons," said PPL Spokesman John Drexler. "The cost of land, availability to interconnect to the broader network, environmental and community concerns" are all factors governing whether they will be built, Drexler said. "This is more the Lewis and Clark expedition part. We're getting on the interconnection queue."

In an effort to avoid a lengthy Public Service Commission procedure and beat the competition, KeySpan's strategy involves building 79-megawatt plants that would be permitted locally. Those fall under the 80-megawatt threshold above which PSC oversight kicks in. LIPA, with its request for proposals to build three 75-megawatt plants, is doing the same.

The projects came to light after being filed with the New York Independent System Operator, a five-month-old Albany-based entity that monitors the reliability of the power system and coordinates the supply of electricity around the state.

For LIPA, the slew of projects will further its stated aim of promoting more electricity competition following New York State's deregulation of the industry starting in 1998. Its Long Island Choice program already allows consumers to buy from two independent competitors – Con Edison Solutions and FPL Energy Services.

"I think there's a lot of companies that want to get into the Long Island market for the retail choice program," said Hubert M. Bianco, Freeport Electric's superintendent. "Some of the projects proposed will never see the drawing board because of licensing and negotiation issues."

LIPA

Continued From Page 1A

by April 17. LIPA said another bid for a second 300-megawatt capacity cable will go out within three months.

"We downsized the project," said Rich Bolbrook, LIPA's vice president of power markets. "We learned from the experience that there are better ways to do this technologically speaking." Bolbrook said the new method would also be cheaper to build and thus lower LIPA's transmission costs.

With the cable, LIPA would connect to other state electric grids in Connecticut, Rhode Island, New Jersey and New England, allowing it to draw during peak summer hours from regions that, because of different geography and weather conditions, may have excess power. Long Island's electric cable connections through New York City and Westchester are sometimes overburdened in peak usage hours.

"We have a limited amount of import capability," Bolbrook said. "And as our load grows, our import capacity as a percentage of the whole is decreasing."

Also factoring into the decision to hold a new bid was a lawsuit. American Electricity Power Resources last year sued LIPA because the winning bidder, TransEnergy, was the only bidder.

TransEnergy and the Italian cable and tire company Pirelli are among the recipients of bid criteria for the new round. LIPA expects the first cable to be operating by the summer of 2002, and the second a year later.

"LIPA, since they don't own generation, is looking to do what I do," said Hubert M. Bianco, superintendent of Freeport Electric, a municipal generator and electricity buyer. "They go out and look at opportunities off Long Island to buy energy."